IPC-3605N

The First Consumer-Friendly Network Camera

User's Guide

Edition 1.11, 11/2012

ZyXEL

www.zyxel.com

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Important Notices

Regulatory Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment to an outlet on a different circuit than the receiver is connected.
- Consult the dealer or an experienced TV/radio technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Operation Safety

Before using this camera, please read and follow the steps below to protect your IP camera.

- Please place the IP camera on a level surface and keep it out of direct sunlight
- Keep the IP camera indoors and away from water, dust, humidity, and magnetic products
- Do not rotate your IP camera by hand. It may cause damage to the camera.
- Do not drop the IP camera, this may damage the mechanical parts of the camera.
- Do not disassemble or remodel the product, it can cause damage or fire.
- Do not shake, move, or disturb the camera when it is in operation, as such actions may result in the malfunction of the device.
- Power the camera off if it produces smoke or unusual odor.
- Do not place the IP camera around heat sources such as a Television or microwave oven.

About This Manual

This manual is indented only for users of the ZyXEL IPC-3605N network camera.

Conventions in this Manual

While using this manual, pay attention to symbols and notations used to draw attention to special situations, such as:

Caution!
Information provided with this symbol is critical to prevent damage to the product or injury to the user.

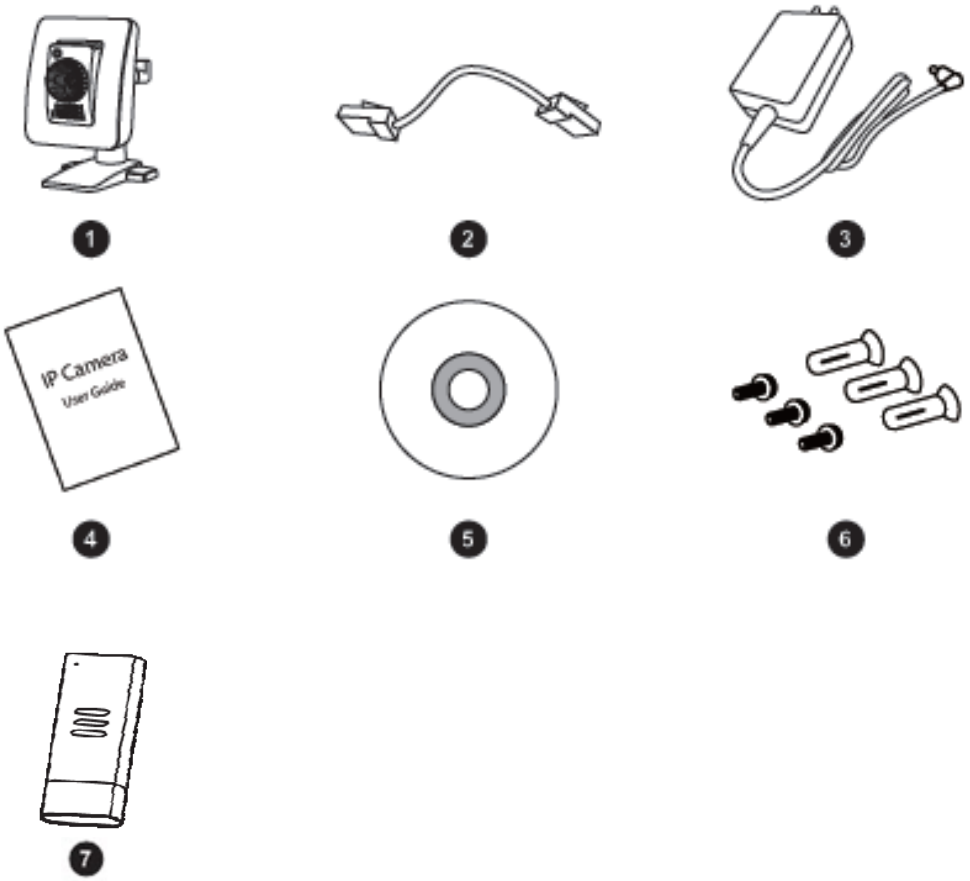
Important!
This symbol indicates instructions that a user must follow in order to complete a task.

Note:
This symbol indicates additional information or tips to help the user operate the product.

2 Getting to know your IPC-3605N

2.1 Package Contents

Before setup, ensure your package contains all contents. If anything is missing, contact your distributor.



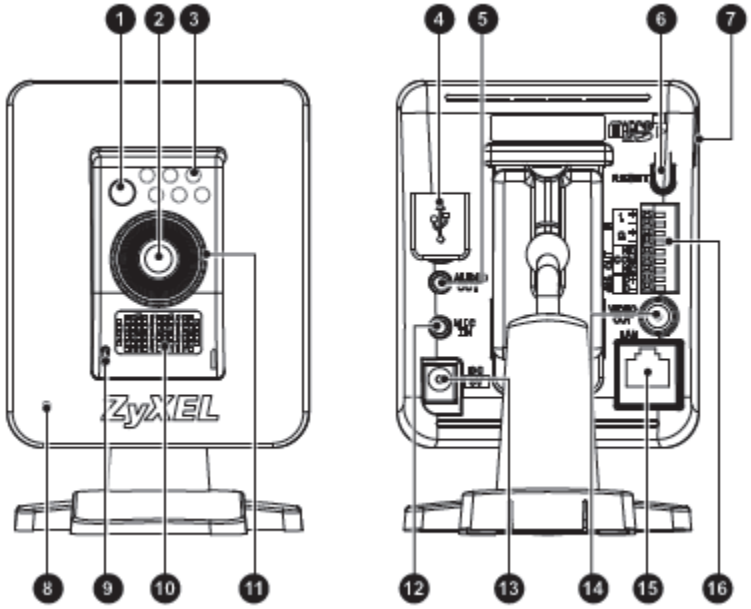
Number	Contents
❶	IPC-3605N Network Camera
❷	Ethernet Cable
❸	Power Adapter
❹	Quick Installation Guide
❺	Install Disk
❻	Mounting Screw x3/ Screw Mount x3
❼	USB Wireless Adapter

2.2 Features

ZyXEL's IPC-3605N is an easy to install product with support for H.264/MPEG-4/MJPEG video compression formats to help ensure high quality video with reduced bandwidth consumption.

- Small and smart functional design
- 2 megapixel/HD resolution
- Dual H.264, MJPEG, or MPEG-4 video streams
- Active bandwidth management
- Network bandwidth detection
- SMS & E-Mail Notification
- Built-in microphone
- Two-way audio communication
- Video recording to local microSD/SDHC
- Mobile connectivity
- Import & Export camera profiles

2.3 Camera Layout



Number	Contents
1	Light Sensor
2	Lens
3	IR LEDs x6 (inside)
4	USB Wireless Adapter Connector
5	Audio Input
6	Reset Button
7	MicroSD Card Slot (on side)
8	Microphone
9	LED status indicator
10	Speaker
11	Focus adjustment ring
12	Microphone input
13	Power adapter port
14	Composite video jack
15	Ethernet port
16	I/O (2 in/1 out) & RJ-485 connector

2.4 LED Status Indicator

The LED status indicator consists of one red and one blue LED. Depending on the camera's status, the LEDs will appear as follows:

Red IR LEDs (Left), Blue Status LED (Right)

When the IP camera is turned on, the LEDs will light in the following patterns:

Red LEDs	Blue LED	Indication
On	On	System booting
Off	On	Successfully established network connection
On	Off	Performing hardware test
Off	Off	Powered off
Blinking (Every 0.5 seconds)	Off	Failed to connect to network/Failed to establish WPS connection
Off	Blinking (Every 0.5 seconds)	Attempting to establish a WPS connection
Off	Blinking (Every 0.2 seconds)	Successfully established a WPS connection
Blinking	Blinking	Attempting to establish a network connection

2.5 Digital I/O Connector Block

The I/O connector on the back of the camera provides a central interface between your home security system and various input devices.

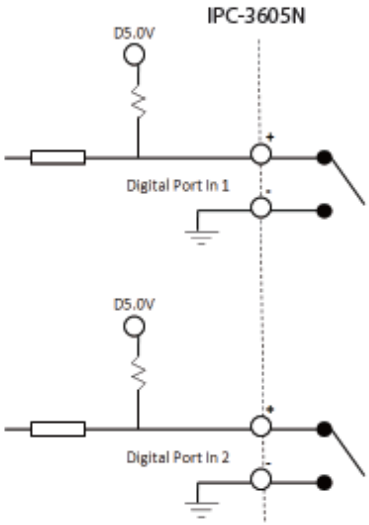
The two digital inputs are normally used with security sensors. They work by detecting a change in the state of an open or closed circuit. You can check the status of the circuit in [Setup] > [Event Setup] > [I/O Status]

The output port is normally used to trigger external audio or visual indicators, like sirens or strobe lights.

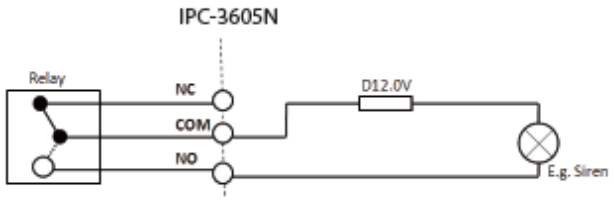
Pin	Name	Specifications	Note
1 – 4	Digital Input Ports 1 & 2	Max 5V DC, 60mA	Floating, TTL
5 - 7	Digital Output Port	Max 24V DC, 1A or Max 125V AC, 1A	You can only use either the Normally Open (NO) or Normally Closed (NC) at any given time.

Table 1-2. Digital I/O Connector

Digital In Ports



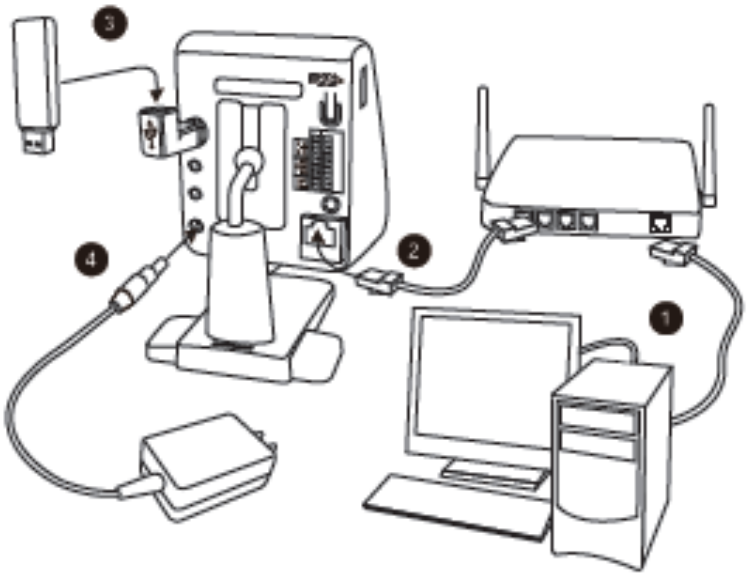
Digital Out Port



3 Installation

3.1 Connecting your IPC-3605N

The picture below illustrates the basic connection of your IPC-3605N camera:



The following table describes the numbered items:

Number	Contents
❶	Ethernet cable from PC to hub/router.
❷	Ethernet cable from router to camera. Use the bundled Ethernet cable to connect the LAN port of the IP camera to the LAN port of your hub/router.
❸	Wireless adapter (optional). If you're using the USB Wi-Fi adapter, plug it into the USB port on your camera for wireless reception.
❹	Power: Attach the power adapter to the camera's power port, and connect the plug to a power outlet.

Important!

- The Camera's USB port only supports the bundled ZyXEL Wireless adapter.
- After unplugging the camera's power cable, wait at least 4 seconds before restoring power to the camera.

3.2 Wireless

While using the ZyXEL Wireless adapter, you'll be able to connect your camera to your network via WiFi. Keep in mind that you can only have one active connection at any given time – either through LAN or a wireless network.

Note: If the wireless connection drops or seems slow, try moving your IP camera closer to the wireless access point for an improved signal.

Important!

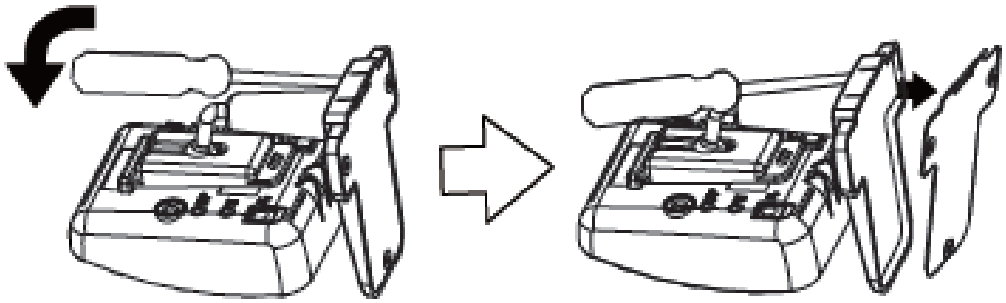
- Obstacles between your camera and wireless access point, particularly if made of materials like wood, cement, or metal, will weaken the strength of your wireless signal.
- Other 2.4 GHz devices such as microwaves and wireless phones may degrade performance. Attempt to keep your camera away from such devices.

3.3 Wall and Ceiling Mounting

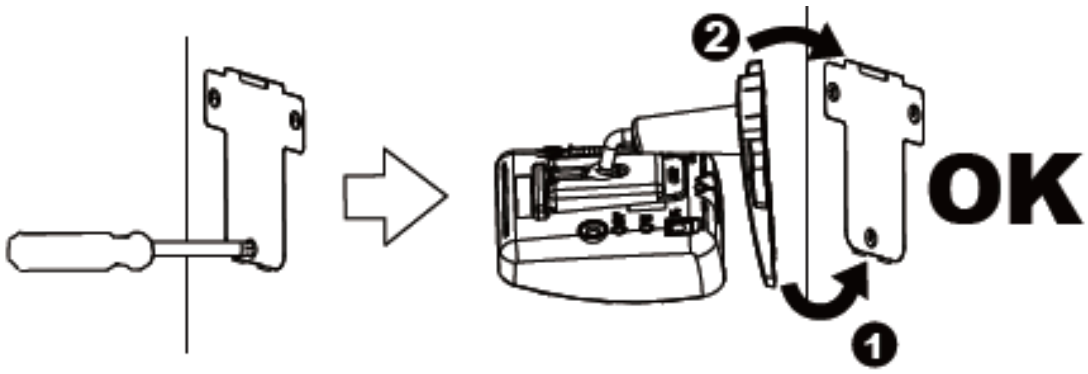
In order to mount the camera on the wall or ceiling, use the included screws to fix the bracket to a flat surface. After the camera has been affixed, adjust the camera to the required viewing angle.

Follow the steps below to mount your camera:

Step 1: Detach the metal mounting plate from the base of the camera by inserting a flat head screwdriver into the rectangular hole at the wide end of the base and pressing downward to push the plate away from the rest of the camera.



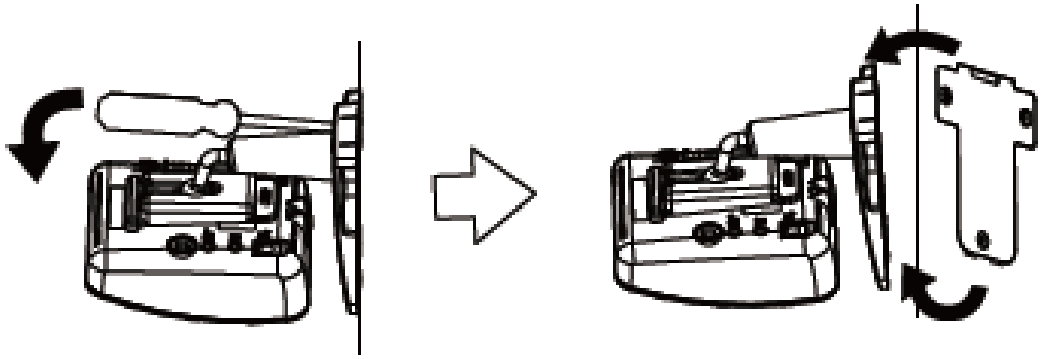
Step 2: Press the bottom of the mounting plate (the side with protruding screw holes) against the mounting surface. Screw the plate to the mounting surface, and click the plate back into its position at the bottom of the camera, as shown in the figure below.



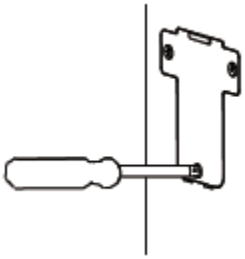
3.4 Dismounting the Camera

The following instructions will detail how to remove the camera from a mounted surface. A flat head and Phillips screwdriver will be required.

Step 1: Remove the camera from the metal mounting plate by inserting a flat head screw driver into the rectangular hole on the wide end of the plastic base, and pushing downward.

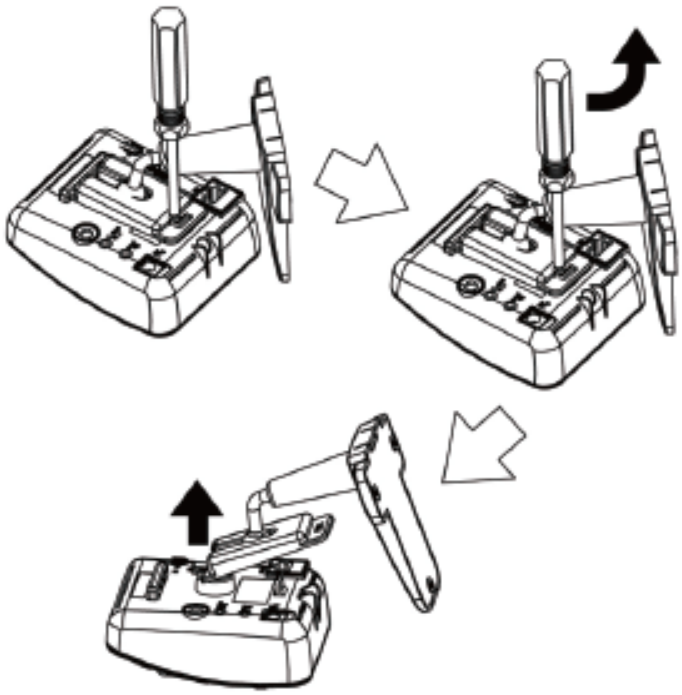


Step 2: Use a Phillips head screwdriver to remove the metal mounting plate from the mounting surface.

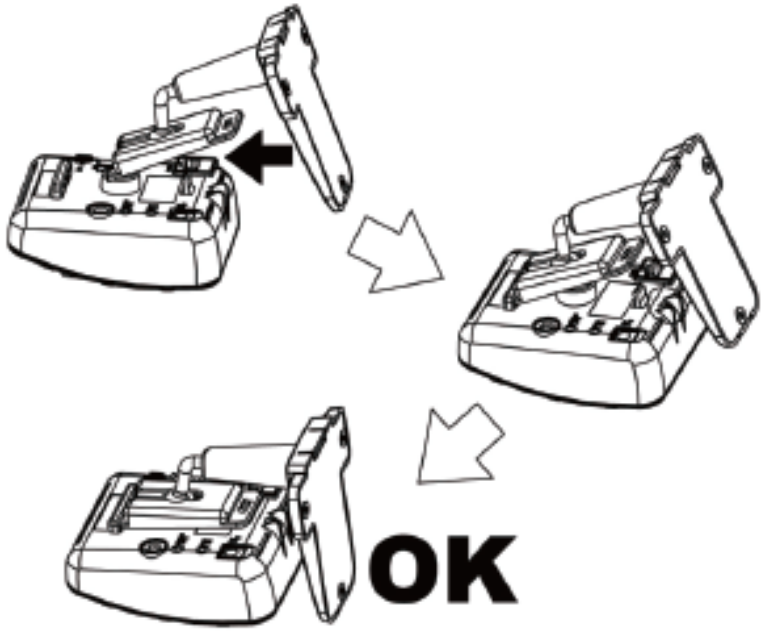


3.5 Disassemble/Assemble the camera stand

The camera comes attached to its stand when delivered from ZyXEL. If you need to detach or reattach the stand, follow the diagrams below.



To reattach the camera stand:



4 Initial Setup

Before running the setup utility, make sure you have the IP Camera properly connected. To begin setup, insert the installation CD supplied with the camera into the CD-ROM drive of the viewing PC, and the eaZy Wizard utility will start and guide you during the installation process of the hardware and software for your IP camera.

4.1 Adjusting the Focus

After initial setup, the camera's focus will need to be adjusted. In order to adjust focus, aim the camera at the area you wish to monitor and gently turn the focus adjustment ring, located at the front of the camera. Turning the ring clockwise will move the focus farther away, while turning counterclockwise will move the focus closer.

Important: Do not over-tighten the adjustment ring, as this may damage the unit.

Accessing your camera

Your camera's video feeds can be accessed in a number of ways, as follows.

1) Your camera is CloudEnabled™ and can be viewed from any PC running a modern web browser with the Flash plug-in installed. When you first setup your camera using the included CD, it will register your camera with iSecurity+. Simply point your web browser to http://zyxel.isecurityplus.com and login with the username and password you created during setup. You can also download the iSecurity+ app from iTunes or the Android Market to view your camera from a smartphone or tablet. This is by far the easiest way to view & control your camera.
2) View the live video stream on the web browser of any computer. This feature is compatible with all Desktops, Laptops, or Tablets modern browser. This is the easiest way to view the video of the IP camera and requires little learning time. This may require advanced configuration of your home router in order to view the camera remotely.
   (Note: Non-IE web browsers, such as FireFox and Safari, are supported after a VLC plug-in installation.)
3) View the live video stream on the mobile web browser of your iPhone/iPod, Android phone, BlackBerry, PDA, or any other mobile phones with a built-in web browser. Through live Motion-JPEG video streaming, you can view your ZyXEL IP camera while on the go. This may require advanced configuration of your home router in order to view the camera remotely.
   (Note: This functionality requires that a secondary video stream be enabled. Motion-JPEG mode only offers live viewing function.)
4) View the live video stream on any 3G capable smartphone over the internet.
   (Note: A secondary video stream must be enabled.)

4.2 CloudEnabled™ Viewing

4.2.1 Accessing via iSecurity+ Smartphone App

iSecurity+ is an iOS/Android App designed to allow you to quickly and easily access, control, and view your camera's video feeds from anywhere.

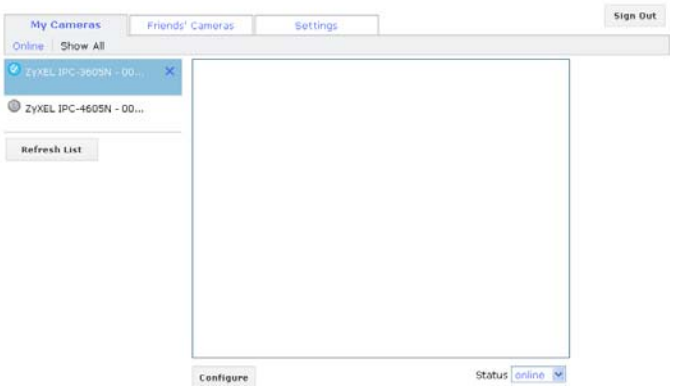
The iSecurity+ can be located on the App Store and Android Market from your device by searching "iSecurity+," or directly from your computer at the Android Market (http://market.android.com) for Android devices, or the App Store through iTunes (http://www.apple.com/itunes).

4.2.2 Accessing via iSecurity+ Web App

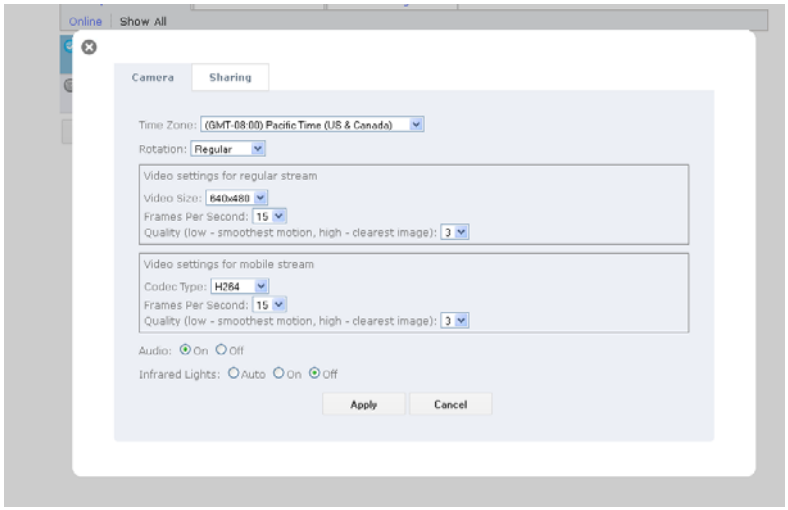
Once a second stream has been successfully enabled on your ZyXEL camera, you can use the iSecurity+ web app to view your video feeds. To access the app, simply navigate to http://zyxel.isecurityplus.com/login in your web browser.

From the login screen, simply enter the username and password you configured during the camera's initial setup (For more information, see the eaZy Setup Wizard).

The following screen will appear:

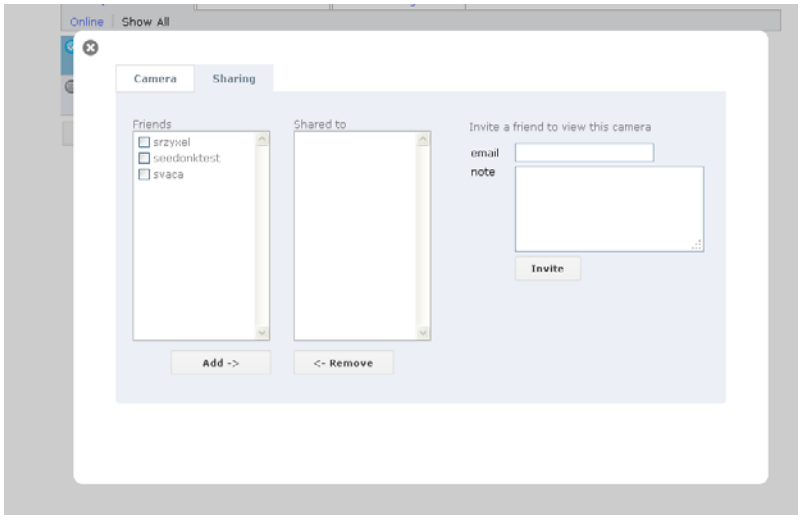


To configure your camera's settings, click the Configure button beneath the video display.



This page allows you to easily adjust your camera's time zone, display and audio settings, and infrared lighting.

Sharing options can be accessed from the Sharing tab at the top of the screen.



4.3 Direct Viewing of your Camera (For Advanced Users)

4.3.1 Accessing via PC web browser

Users can access their video feeds and camera management tools easily through any web browser. Simply follow these steps.

1) Open any web browser (Internet Explorer, Safari, Firefox, Chrome, etc.)
2) Type in your camera's IP address (eg. 192.168.1.11. This number can be easily found by using the eaZy set up Wizard utility)
3) A dialogue box will appear requesting a user name and password. (Default username and password are 'admin' and '1234')

4) After entering a valid username and password, your browser will prompt installation of camera software from ZyXEL Communications Corporation. Click on the warning message, and choose to Install ActiveX
5) A confirmation dialogue box will appear. Select [Install] twice to install both USActiveX.cab and IPCamClientActiveX.cab.

Note: ZyXEL ActiveX only supports 32-Bit browsers. If you're running a 64-bit Operating System, you'll still have to run the 32-Bit version of your browser in order to access your camera.

6) If a security alert appears, select "Unblock."

Windows Security Alert
To help protect your computer, Windows Firewall has blocked some features of this program.
Do you want to keep blocking this program?
Name: Internet Explorer
Publisher: Microsoft Corporation
Keep Blocking
Unblock
Ask Me Later
Windows Firewall has blocked this program from accepting connections from the Internet or a network. If you recognize the program or trust the publisher, you can unblock it. When should I unblock a program?

7) You're now ready to view and manage your camera from your web browser.

Note: If your IP camera falls behind a firewall, you will need to enable ports 80 and 554 in your firewall and link them to the internal IP address of the camera. Should you have more than one, increase the values above by 1 (For example, the second camera would have ports 81 and 555.)

4.3.1.1 Page Layout

On the first page, you can see the basic control panel on the top and left, and live video on the right hand side. Click the ▲ icon to collapse control panels.

The following table describes the labels found on this screen.

Number	Label	Description
1	Left control panel	provides control over video recording, voice communication, I/O, and snapshot
2	Video stream	Allows you to change between stream-1 and stream-2. (Stream 2 can be enabled and configured in [Settings] > [Video]
3	Video mode selection	Allows you to change the video display between single, multi, and auto-scan.
4	Top control panel	Allows you to adjust Brightness, speaker volume, and microphone volume.
5	Live Video pane	Live video stream. You can switch to full-screen mode by right-clicking on the video pane and selecting ‘fullscreen.’
6	Channel selection	Select a channel from the drop-down list, or click the arrow icon to switch to the next/previous channel.

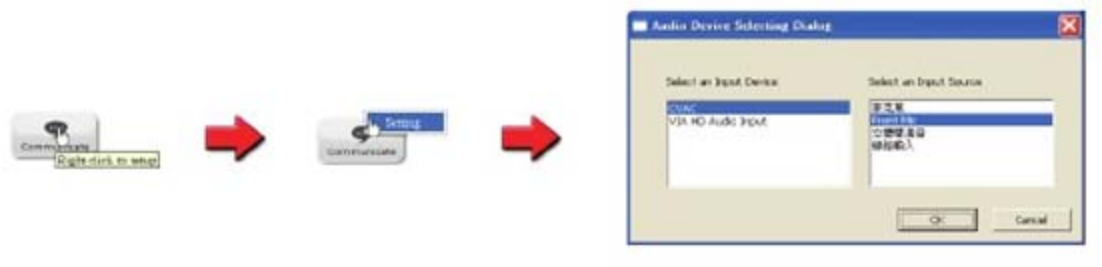
4.3.1.2 Icons

The following table describes the icons found on this screen.

Icon	Label	Description
	Fit to browser	Resizes the live video pane to fit your browser window
	Actual size	Resizes the live video pane to the original size
	Brightness	Adjusts the camera's brightness.
	Microphone Volume	Adjust microphone volume. Click the icon to mute the built-in microphone
	Setup	Click the [Setup] button to access the settings for you camera.
	Speaker Volume	Adjust speaker volume. Click this icon to mute the built-in speaker
	Snapshot	Click the snapshot button to take a snapshot from live view. A preview window will pop up. Right-click and choose 'Save Image As…' to save the snapshot to your PC.
	Communicate	Allows you to speak into your PC microphone and broadcast through the camera's speaker. See the Voice Communication section for details.
	Digital Out	Triggers the alarm and siren connected to the Digital Out port of your camera
	Record	Record live video by pressing the [Record] button. (If your computer cannot play .mkv files, download and install VLC media player from the internet.)
	Open	Open a file browser to search and playback video files captured by the camera

4.3.1.3 Voice Communication

Pressing the button allows you to speak into your PC microphone and broadcast through the camera's speaker or audio line out. To talk through the external speaker connected to the IP camera, place your cursor on the button, right-click, and select [Settings] to choose input device and input source.



With the device configured, clicking the will allow you to speak through your microphone and be heard from the camera for 90 seconds.

Note:
When using the voice communication feature, you may experience various degrees of delay between transmission from the computer and playback on the camera, depending on the condition of your network environment.

4.3.2 Accessing via iPhone/Smartphone Web Browser

Any smartphone with a built-in web browser can be used to view the live video feed in M-JPEG format (video only). Viewing of M-JPEG video streams is supported by Android and iPhone devices, as well as a variety of mobile internet devices like laptops and tablets.

Supported Platforms:

- Windows – IE, Google Chrome, Safari, FireFox (Non-IE browsers require VLC plugin)
- Linux – Firefox
- Mobile Devices – iPhone, iPod Touch, BlackBerry, Android, Windows Mobile

Prior to viewing your camera from a remote location over the internet, port forwarding must be configured on the router to which the IP camera is connected. (For more information, see the remote viewing section in the troubleshooting chapter). Then follow these steps to view your camera using a mobile web browser:

1) Use a PC to log on to the camera, then go to [Setup] > [Video Settings], then check the [Enable 2nd Stream (include 3GPP)] box to enable a secondary video stream.

Video settings
Turbo Picture (Offers best picture quality with max. frame rate of 15 FPS)
Motion Adaptive (Offers higher frame rate of up to 30 FPS with a max. resolution of 640 x 480)
Video
Camera
Audio
Users
Network
Event Setup
Date
Multi-Camera
Enable 2nd Stream(include 3GPP)
Please enable 3GPP stream to allow the live view on cell phones.
Please set Stream-2's codec to Motion-JPEG if you wish to view the live stream on cell phones with web browser only (without a RTSP client).
Stream-1:
Resolution: SXGA
Codec: H.264
Framerate: 15
Quality: 1Mbps
Stream-2:
3GPP Mode
Resolution: QQVGA
Codec: MPEG-4
Framerate: 5
Quality: 512kbps
Viewing on PC :
Viewing on 3GPP Phone :
You may wish to bookmark the above links in your browser for future reference.
Save
Reset

2) For stream-2, set the codec to “Motion JPEG.”
3) Launch the web browser on your iPhone, Android phone, or other mobile internet device, and enter [IP address]/mjpeg.html into the address field of your phone’s web browser to watch live video on your mobile device.
   (Note: The IP required IP address is located at the bottom of the page, just above the [Save] and [Reset] buttons.)

4.3.3 Accessing via 3GPP Mobile Phone

You can access your IP camera via 3GPP-compatible mobile phones provided your camera has a stable internet connection, and your mobile devices has a stable connection to the 3G network. There are also several steps which must be taken to ensure 3GPP functionality.

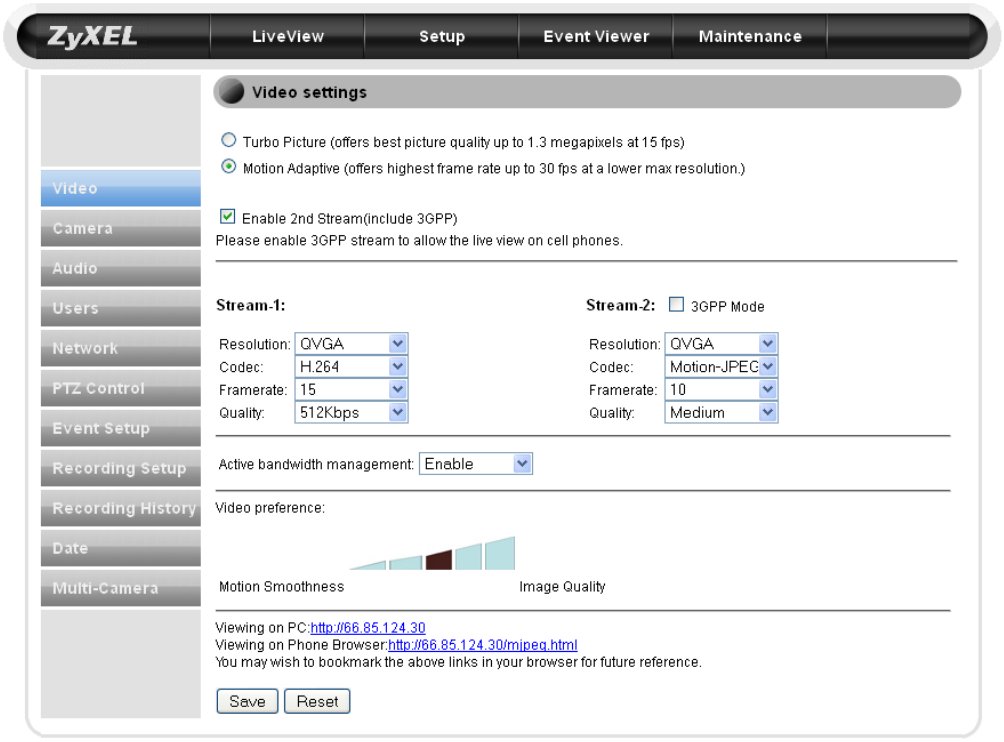
1) The second video stream (located at [Setup] > [Video Settings]) must be enabled, with resolution set to QQVGA, FPS set to 5, codec set to MPEG-4, and quality set to medium.
2) DDNS functionality must be enabled, with a valid DDNS address.
3) An active internet connection must be available for both the IP camera and the mobile device.
4) Port forwarding must be properly configured (as detailed in section 4.2)

Having taken the above steps, enter the camera's RTSP streaming address into the address field of your mobile web browser. The RTSP address will take the form of "rtsp://ipcamera-ip/medias2", wherein "ipcamera-ip" is the IP address located above the [save] and [reset] buttons in [Setup] > [Video Settings].

5 Configuration

5.1 Video Settings

The Video Settings screen consists of all the basic settings options. To access the main setup page, click on the setup button at the top right in the live view screen. You can configure detailed settings of your IP camera here.



The following table describes the labels found on this screen.

Label	Description
Turbo Picture	This mode provides best video quality, but frame rate is limited to 15.
Motion Adaptive	This mode provides 30FPS at a lower resolution
Enable 2nd Stream	This enables the second stream for viewing from mobile devices.
Stream-1/Stream-2	
Resolution	Resolution settings. Options are QQVGA, QVGA, VGA, and 1080x720 (720p)
Codec	The codec used to encode video. MPEG-4 can be viewed from external devices, while H.264 uses less bandwidth.

Framerate	Framerate. 5~30 FPS. Higher framerate is more bandwidth-intensive.
Quality	Video quality settings. 64kpbs~3Mbps.
Active Bandwidth Management	Allows the IPC-3605N to intelligently change video bitrate depending on network congestion. This avoids video deterioration and frame dropping.
Video Preference	Allows you to choose between a preference toward higher quality image or a higher framerate. Click on the bar to set.
Viewing on PC	The IP to view your camera from a PC outside the network.
Viewing on Phone Browser	The address to view your camera from a mobile device.
Save	Saves current settings
Reset	Reset to defaults.

5.2 Camera Settings

To access the Camera Settings screen, click on ‘Camera’ on the navigation bar in the settings menu. From this page, you can control image and color related settings, as well as the IR lights of your camera.

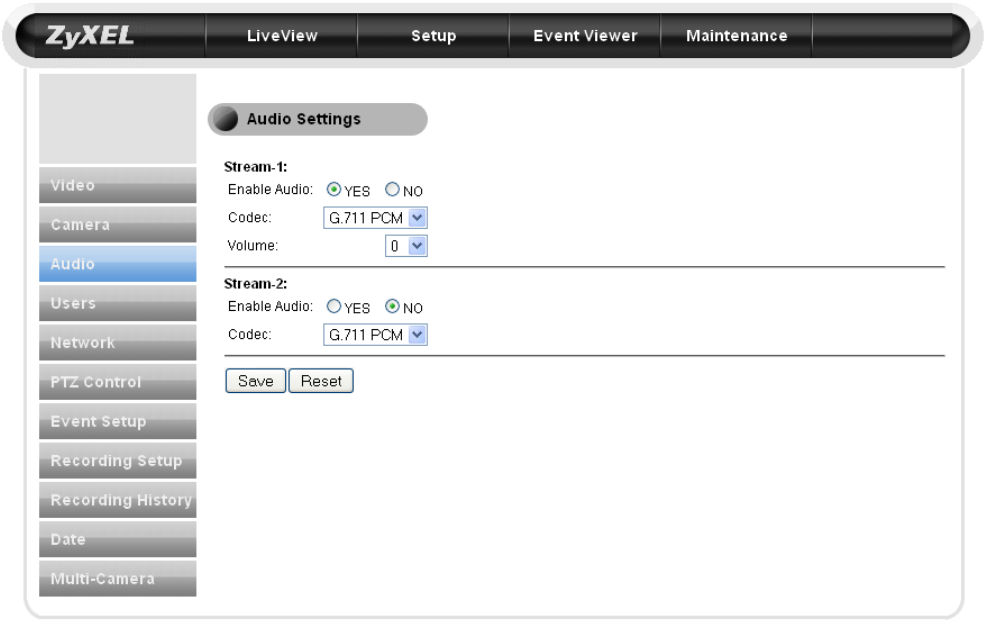
The following table describes the labels found on this screen.

Label	Description
Video Properties	
Brightness	Set image brightness (1~100)
Sharpness	Set image sharpness (1~8)
Saturation	Set image saturation (1~10)
White Balance	Set image's white balance to compensate for different lighting conditions.
Flickerless	Sets Flickerless mode. 50(default) or 60 Hz
Exposure Control	
Auto	Allow the camera to automatically control shutter speed.
Manual	Manually configure shutter speed (1/5s~1/1600s)
Low Light Behavior	
On/Off	Controls your camera's automatic behavior in low-light.
Maximum Exposure	Control shutter speed in low light. (Disable~30FPS)
Maximum Gain	Controls image gain in low light. (1~8.5dB)
LED Indicator	Turns the blue LED on the front of your camera On/Off
IR Light Control	
Operation Mode	Allows you to set when your camera's IR lights will turn on. Options include Always Off, Always On, Auto, or By Schedule.
Activate/Deactive IR light on…	Allows you to set days and times when the camera's IR lights will be active.
Embed Text and Image	
Location	Embed text in the upper left, upper right, lower left, or lower right of the video feed.
Text	Enter the text you wish to display.
Enable Flip Mode	Flips the image 180 degrees vertically. Enable this feature when the camera is mounted upside-down.

5.3 Audio Settings

The Audio Settings screen allows you to enable or disable audio, as well as adjust volume. Stream-2 audio is only available for adjustment when it is selected and 3GPP mode has been checked in video settings.

To access the Audio Settings screen, go to settings, then select Audio from the sidebar. The following screen will appear.



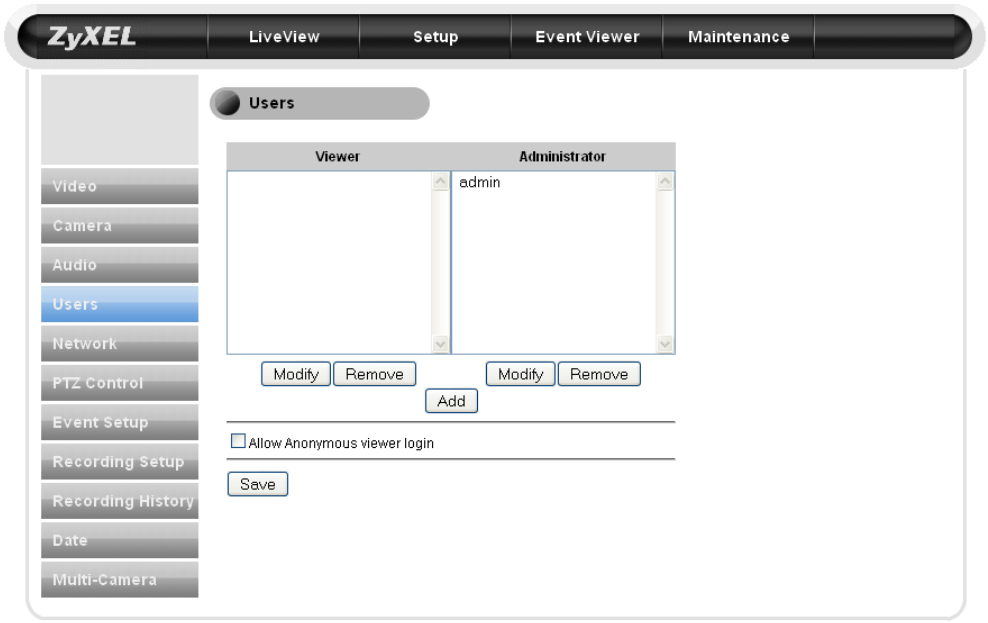
The following table describes the labels found within this screen.

Label	Description
Enable Audio	Select Yes or No to enable or disable audio.
Codec	Select the codec which will be used to encode audio.
Volume	Select volume level (1~10)
Save	Save settings
Reset	Reset to default settings

5.4 User Settings

The User Settings pane allows you to add, modify, or remove viewers/administrators. Viewers are only able to view live audio, and can't change any camera settings. Administrators may control the camera and make changes to settings.

To access the user settings pane, navigate to Settings, then select Users from the sidebar. The following screen will appear.



The following table describes the labels found within this screen.

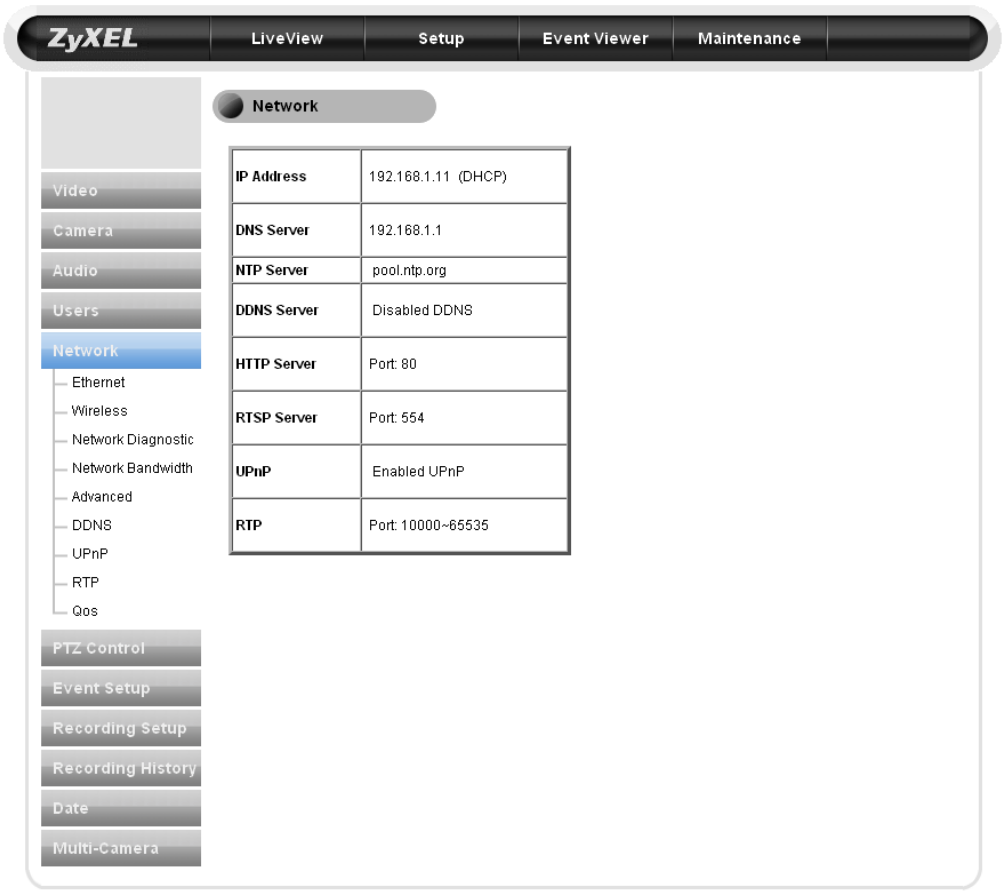
Label	Description
Modify/Remove	Click here to Modify or Remove an existing viewer
Add	Click here to add a new viewer or administrator
Allow anonymous viewer login	Click here to allow anonymous viewers without requiring name and password. These viewers are restricted to viewing live video only.

When you add a new user, the following screen will appear to allow you to provide user name, password, and group type.

5.5 Network Settings

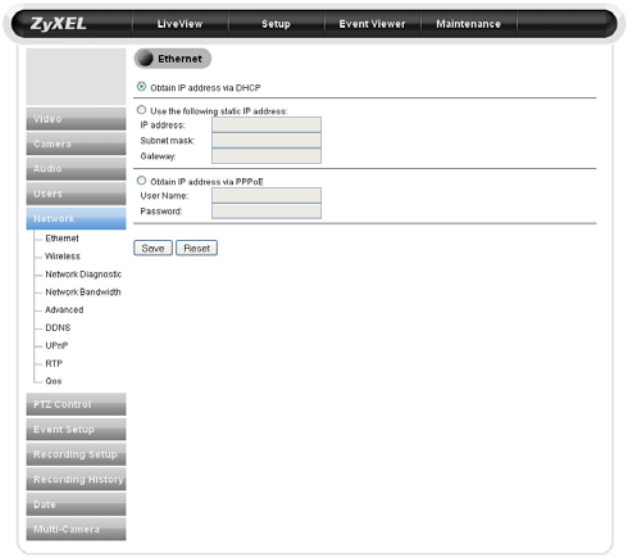
The Network Settings page allows you to check your network settings and make detailed adjustments.

To access the Network Settings pane, navigate to settings and select Network from the sidebar. The following screen will appear.



5.5.1 Ethernet Settings

The Ethernet Settings page will allow you to choose your IP address configuration. To access the Ethernet Settings page, navigate to Settings, then select Network, and Ethernet from the sidebar. The following page will appear.

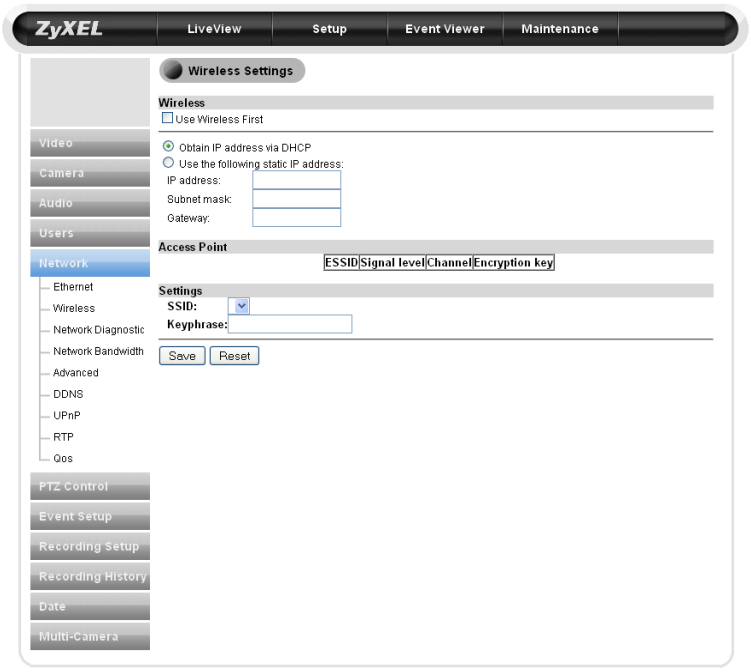


On this page, you can set the camera to obtain an IP address via DHCP (recommended), use a manual IP address, or obtain an IP address via PPPoE, for which a valid user name and password are required.

5.5.2 Wireless Settings

If you have installed the ZyXEL wireless adapter, you'll be able to set up a wireless connection from this page. To connect wirelessly, check the [Use Wireless First] box to give priority to wireless connections when the LAN network is also connected. You will also be able to choose to connect via DHCP or a static IP address and specific access point.

To access the wireless settings, navigate to Settings, then to Network on the side panel, then select Wireless from the dropdown menu. The following screen will appear.



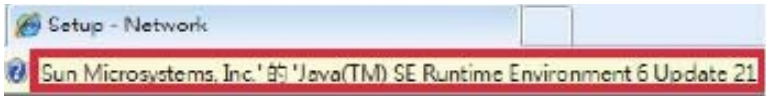
5.5.3 Network Diagnostic

Here you can run the diagnostic tool for your current network settings, and it will show error messages if any anomaly is detected. For further information on error messages, please refer to the troubleshooting section.

5.5.4 Network Bandwidth

This automatic network connection test helps users better define the appropriate video bitrate for their network. To perform the network bandwidth test:

1. Go to [Setup] > [Network], and click on [Network Bandwidth] located on the left menu to start.
2. Wait for your browser to prompt the installation of a java plug-in. Click the text to accept.



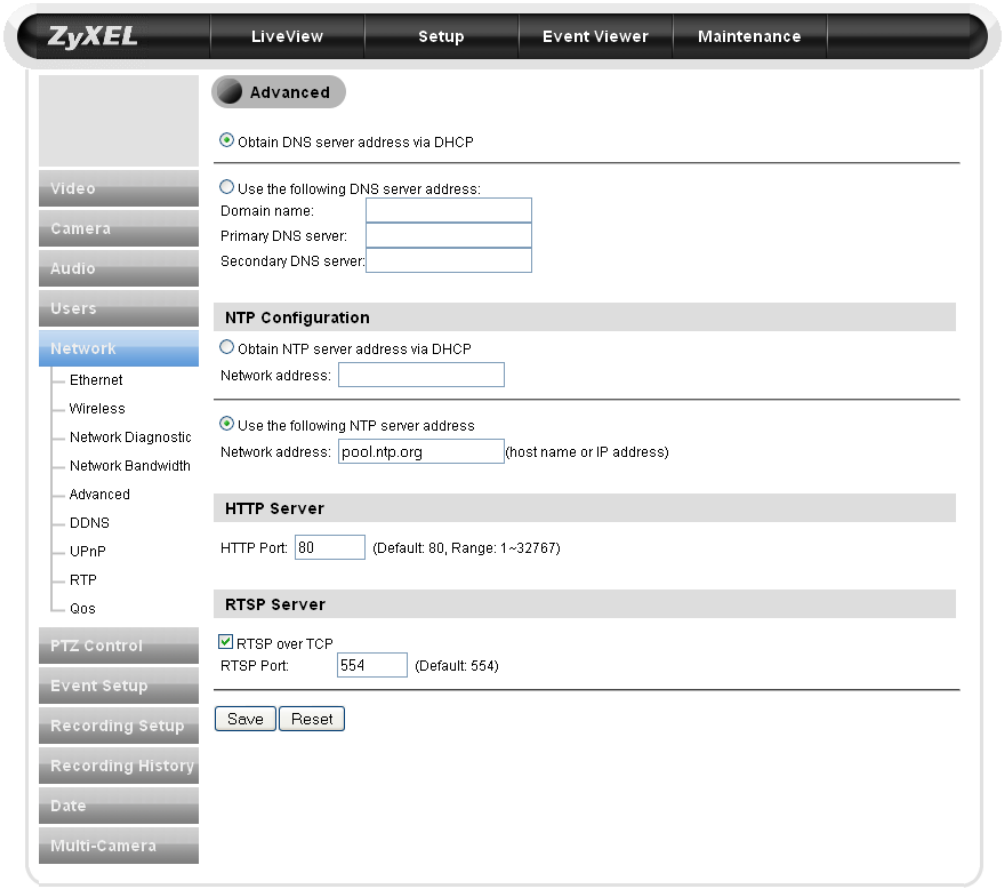
3. The camera will begin testing your connection’s speed.
4. When the diagnostic is complete, the camera will advise you as to the optimal settings for your camera.

The camera's current connection speed can provide a smooth viewing of the video and you may open 10x simultaneous viewing of the 1st stream.

This message indicates that the currently connected network has the capacity to support up to 10 network cameras of identical bit rate settings (either on Stream 1 or Stream 2). If the message shows a less favorable result, go to [Setup] > [Video] to select a lower bitrate.

5.5.5 Advanced

This page allows you to adjust advanced network settings. To access this pane, navigate to [Setup] > [Network] > [Advanced]. The following screen will appear.



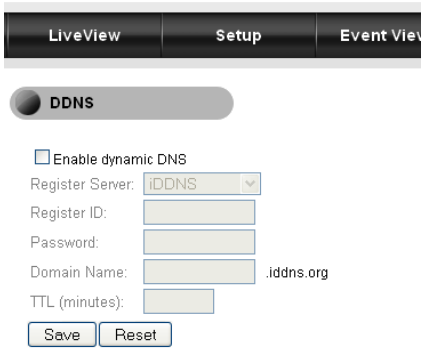
The following table describes the labels on this screen.

Label	Description
DNS Server	Set the DNS server to be found via DHCP, or enter a manual DNS address
NTP Configuration	NTP stands for Network Time Protocol. To synchronize your camera's clock with an NTP server, choose to either obtain an NTP server address via DHCP, or use an external NTP server (default address is pool.ntp.org)
HTTP Server	Set the HTTP port for your IP camera to be viewed and controlled from the internet. Valid port ranges fall between 1 and 32767 (Default port: 80). If your network setup requires port forwarding, refer to the Port Forwarding section of this manual.
RTSP Server	RTSP stands for Real Time Streaming Protocol. Setting a port here allows 3GPP streaming for mobile phones. (Default port: 554)

5.5.6 DDNS

This page allows you to use DDNS (Dynamic Domain Name Service) to tie your camera's current IP address to a domain name, making it easier to remember. If you already have an account with DDNS or no-ip, you can input your domain name here for easier access to your camera.

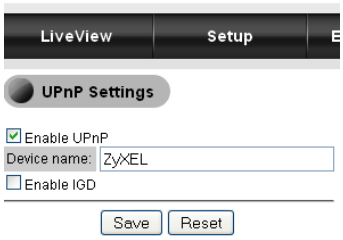
To access the DDNS page, navigate to [Settings] > [Network] > [DDNS]. The following screen will appear.



5.5.7 UPnP

This page allows you to enable/disable the Universal Plug and Play feature of your IP camera, as well as change your device's name. If your operating system supports UPnP, and DHCP is in use on your current network, the IPC3605 will automatically be detected and added to My Network Places in Windows. If you want to use the IGD (Internet Gateway Device) protocol on your camera, it can be enabled from this screen.

To access the UPnP screen, navigate to [Settings] > [Network] > [UPnP]. The following screen will appear.

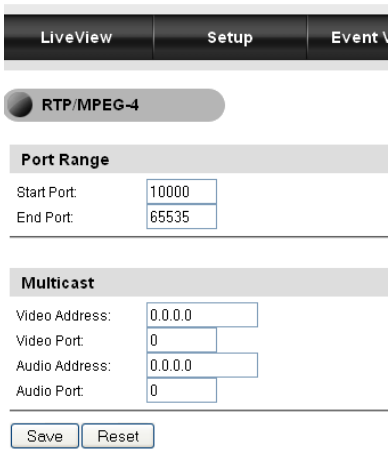


Note: To enable UPnP on Windows, go to Add or Remove Programs in Control Panel, then click Add/Remove Windows Components, double-click "Network Services," and check "UPnP User Interface."

5.5.8 RTP

If you want to broadcast video using RTP (Real-time Transport Protocol), use this page to set up the port range, video/audio address, and port number.

To access the RTP page, navigate to [Settings] > [Network] > [RTP]. The following screen will appear.



5.5.9 QoS

QoS (Quality of Service) helps prioritize network traffic in order to reserve bandwidth for necessary applications. This page will allow you to customize packet priority for different types of packet data (video/audio, event/alarm, web) by specifying values for the DSCP (Differentiated Services Code Point) field in their IP packets. The DSCP value that

represents highest priority is 46. The default DSCP value is 0, which indicates normal priority (no QoS).

The following is a table of recommended DSCP values. The drop precedence indicates the order in which IP packets will be dropped when the network is congested. Packets with a higher drop precedence will be dropped first. Each class in the table is assigned a certain amount of bandwidth.

Drop Precedence	Class 1	Class 2	Class 3	Class 4
High	10	18	26	34
Medium	12	20	28	36
Low	14	22	30	38

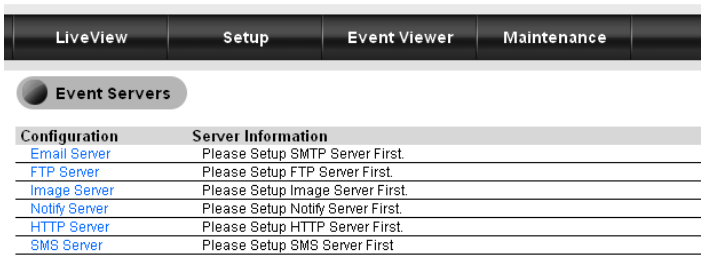
Important note: For QoS to function properly, all switches and routers in your network must also support QoS.

5.6 Event Setup

From this page, your camera can be programmed to respond to events – such as detected motion, or a triggered I/O device – and send a snapshot directly to your e-mail account, ftp server, image server, notification server, HTTP server, or SMS server in order to warn you about what's happened.

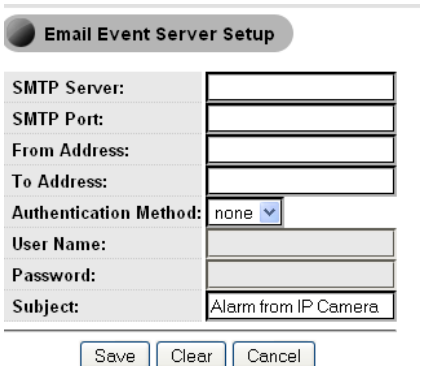
5.6.1 Event Servers

This page provides 6 different server-types capable of receiving notification of events: E-mail, FTP, Image, Image, Notify, HTTP, and SMS. To set up Event Servers, navigate to [Setup] > [Event Setup] > [Event Server Setup]. The following screen will appear.



5.6.1.1 E-Mail Server

Your camera supports standard SMTP on SSL-protected webmail platforms such as Hotmail (Windows Live), and Gmail. To utilize this function, navigate to [Setup] > [Event Setup] > [Event Server Setup] > [Email Event Server Setup]. The following screen will appear.

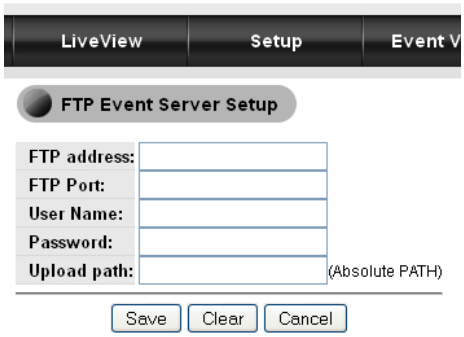


The following table describes the labels found in this screen.

Label	Description
SMTP Server	Enter SMTP server information in this field (ie. smtp.gmail.com)
SMTP Port	Enter your SMTP server's port information
From Address	Enter your full e-mail address (ie. xxxx@xx.com)
To Address	Enter the full e-mail address you wish to receive notifications.
Authentication Method	Login or Plain. For most e-mail servers, select Login.
User Name	Enter your full username (ie. xxxx@xxx.com)
Password	Enter your e-mail account's password
Subject	Enter the subject line you want alert e-mails to have.
Save	Save settings
Clear	Clear settings
Cancel	Cancel

5.6.1.2 FTP Server

This page allows you to set up your camera to automatically upload triggered snapshots to an FTP server. To access this page, navigate to [Setup] > [Event Server Setup] > [FTP Server]. The following screen will appear.

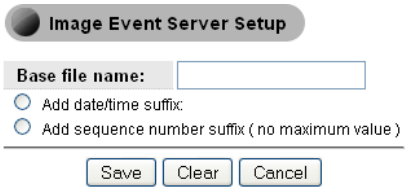


The following table describes the labels found within this screen.

Label	Description
FTP Address	Enter the address of your FTP server
FTP Port	Enter the port of your FTP server
User Name	Enter your user name here
Password	Enter your Password here
Upload Path	Enter the file path of the folder where you want snapshots to be stored.
Save	Save settings
Clear	Clear settings
Cancel	Cancel

5.6.1.3 Image Server

This page allows you to set the file name that will be used when snapshots are taken. To access this page, navigate to [Setup] > [Event Setup] > [Event Server Setup] > [Image]. The following screen will appear.

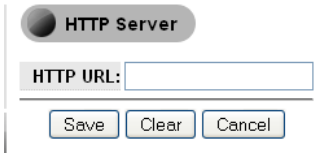


5.6.1.4 Notify Server

This page allows you to input a message that notifies a server that an event was triggered. This feature is meant to be integrated with video management software.

5.6.1.5 HTTP Server

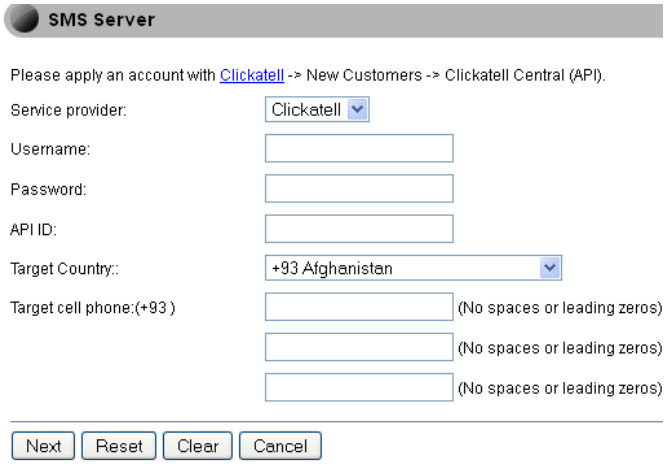
The HTTP Server page allows you to set your camera to input the URL of an HTTP server used by an NVR in order to signal your NVR that there's an event being triggered. To access this page, navigate to [Setup] > [Event Setup] > [Event Server Setup] > [HTTP]. The following screen will appear.



5.6.1.6 SMS Server

Your IP camera is capable of sending SMS notifications to one or more pre-defined recipients in case an event is triggered. This feature requires no additional hardware – users need only to have an account with a third-party web-based SMS gateway service provider.

To access this page, navigate to [Setup] > [Event Setup] > [Event Server Setup] > [SMS Server]. The following screen will appear.

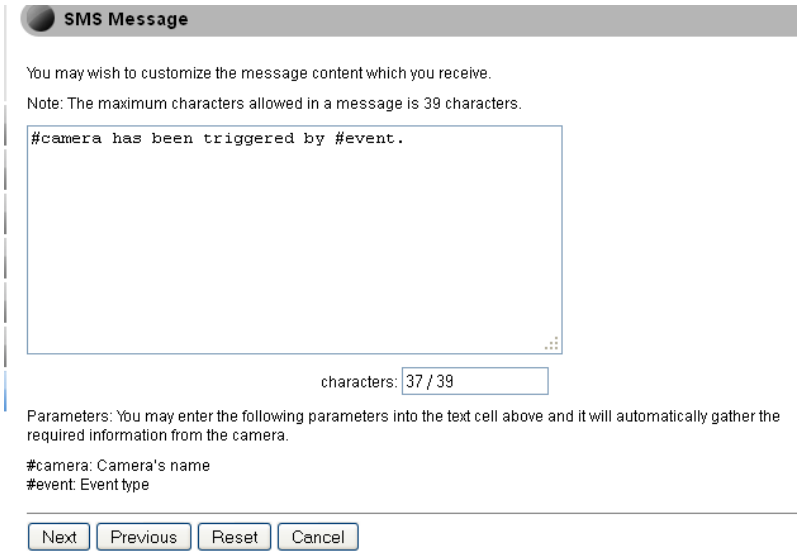


The following table describes the labels found within this screen.

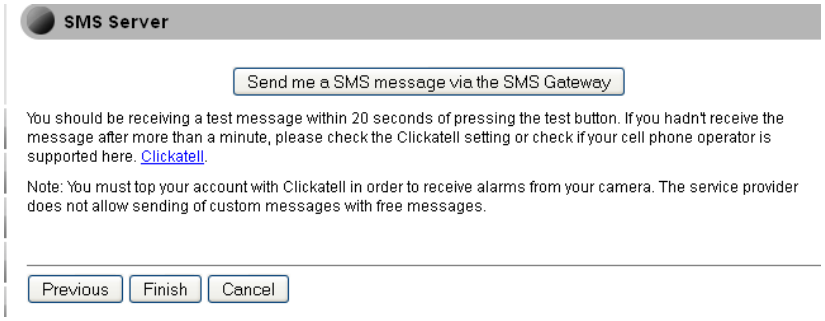
Field	Description
Service Provider	Your SMS gateway service provider. (Default: Clickatell)
User Name	Your user name
API ID	API ID provided by your service provider
Target country	The country code for the recipient's phone number
Target Cell Phone recipient's mobile phone number	Cell phone number of the recipient.
Next	Accept settings and move to the next page
Reset	Reset settings

Clear	Clear settings
Cancel	Cancel

After you input your settings, click [Next]. The following page will appear.


SMS Message
You may wish to customize the message content which you receive.
Note: The maximum characters allowed in a message is 39 characters.
#camera has been triggered by #event.
characters: 37 / 39
Parameters: You may enter the following parameters into the text cell above and it will automatically gather the required information from the camera.
#camera: Camera's name
#event: Event type
Next
Previous
Reset
Cancel

This page allows you to input the message that will be sent when an event is triggered. Enter your message, then click [Next]. The following screen will appear.

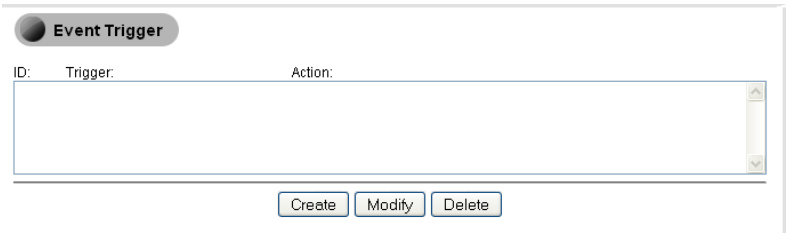

SMS Server
Send me a SMS message via the SMS Gateway
You should be receiving a test message within 20 seconds of pressing the test button. If you hadn't receive the message after more than a minute, please check the Clickatell setting or check if your cell phone operator is supported here. Clickatell.
Note: You must top your account with Clickatell in order to receive alarms from your camera. The service provider does not allow sending of custom messages with free messages.
Previous
Finish
Cancel

This page will allow you to test your camera's SMS functionality. To send yourself a test SMS, click the [Send me a SMS message via the SMS Gateway] button.

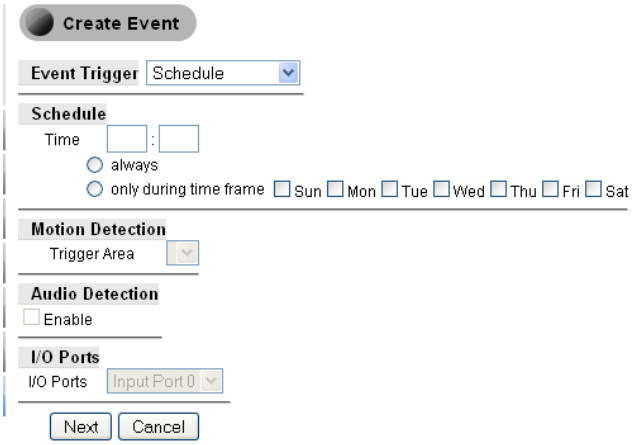
Click [Finish] to complete setup.

5.6.2 Trigger Setup

This page allows you to create, modify, or delete event triggers. To access the Trigger Setup page, navigate to [Setup] > [Event Setup] > [Trigger Setup]. The following screen will appear.



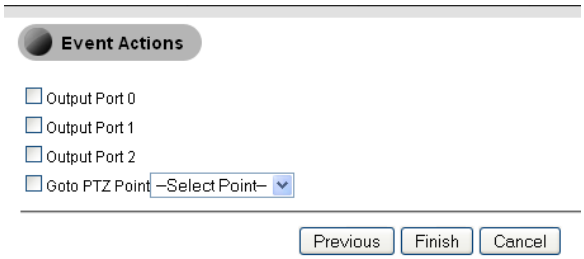
To create an event trigger, click the [Create] button. The following screen will appear.



The following table describes the fields in this screen.

Field	Description
Event Trigger	Set the trigger for this event. Triggers can be based on schedule, I/O port activity, or audio detection.
Schedule	If you wish to schedule an event, input the time and day on which you want events to be triggered.
Motion Detection	Select the area in which motion detection will trigger an event.
Audio Detection	Check the [Enable] box if you wish audio detection to trigger an event
I/O Ports	Select the I/O port you wish to trigger with an event.
Next	Accept settings and move to the next page
Cancel	Cancel

Upon clicking [Next], users will be able to define actions to take when an event is triggered.



Select the actions to be taken, then click [Finish] to complete trigger setup.

5.6.3 Motion Detection

Motion Detection allows you to define up to three regions that will trigger an event if motion is detected.

Select a region, sensitivity level (S1: Lowest ~ S5: Highest) from the dropdown list, and then click and drag on the video display to define the region. Click [Save] for settings to take effect.

5.6.4 I/O Status

The I/O Status page displays the status of devices plugged into I/O ports.

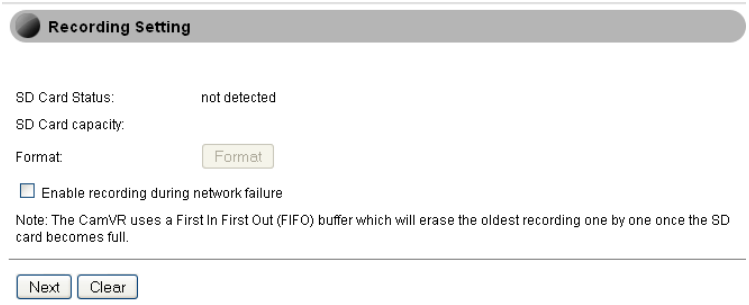
5.6.5 Audio Detection

The Audio Detection page allows you to define the threshold at which sound will trigger an event. The audio detection function on this IP camera works by measuring volume levels.

Sensitivity	Trigger Threshold
Low	Approx 65~70dB
Medium	Approx 80~85dB
High	Approx 100~105dB

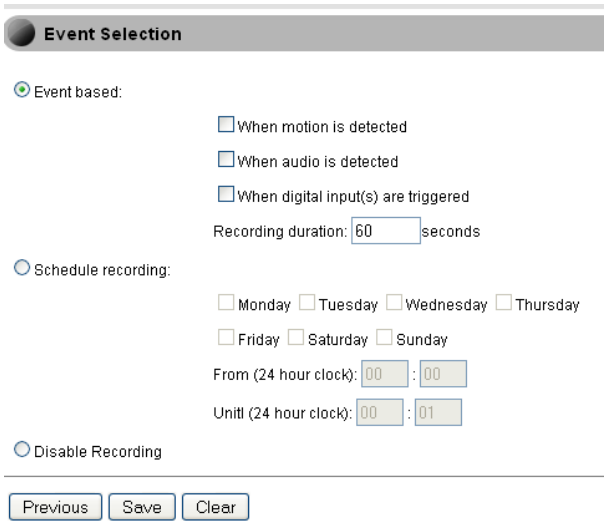
5.7 Recording Setup

The IPC-3605N supports storage of both snapshots and video clips to local storage. To configure this function, navigate to [Setup] > [Recording Setup]. The following screen will appear.


Recording Setting
SD Card Status: not detected
SD Card capacity:
Format: Format
Enable recording during network failure
Note: The CamVR uses a First In First Out (FIFO) buffer which will erase the oldest recording one by one once the SD card becomes full.
Next
Clear

This page allows you to view your SD Card's status, capacity, and gives you the option of formatting the card, as well as enabling recording to an SD card in the event of network failure.

Click [Next] to continue. The following screen will appear.



This page allows you to configure the circumstances in which recording to the SD card will occur. Users may choose to record when motion is detected, when audio is detected, when digital input(s) are detected, and the duration of the recording in seconds.

Users may also schedule recording, or disable recording entirely.

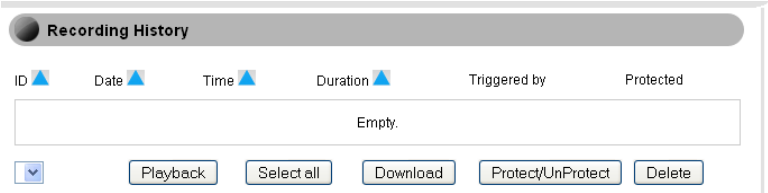
Click [Save] to complete recording setup.

Note:

- This camera uses a First In, First Out storage method. When the SD card is full, the oldest files will be automatically rewritten.
- If you want to record video clips of detected motion to the SD card, you'll need to set a motion detection region before setting up event-based recording.

5.8 Recording History

The Recording History page allows users to manage video clips that have been recorded by the camera. You'll see a playback menu as displayed below.

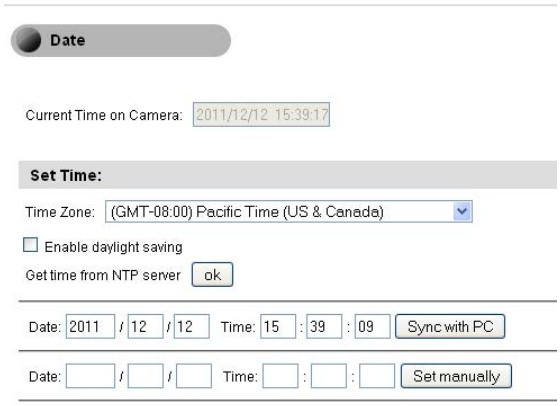


.The following table describes the labels found within this screen.

Label	Description
Playback	Click to download then play the selected clip
Download	Click to download the selected clip to your PC
Protect/UnProtect	Protected files will not be erased. Click this button to Protect or remove protection from selected clips
Select All/Deselect/Delete	File Management

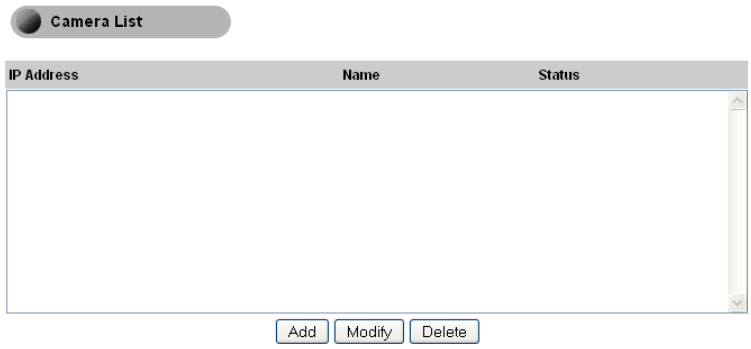
5.9 Date

This page allows you to set the current Date/Time information stored in your camera, as well as set time zones, enable or disable daylight savings time, synchronize the clock of your camera system with your PC, and obtain time information from an NTP server. To access this page, navigate to [Setup] > [Date]. The following page will appear.


Date
Current Time on Camera: 2011/12/12 15:39:17
Set Time:
Time Zone: (GMT-08:00) Pacific Time (US & Canada)
Enable daylight saving
Get time from NTP server
ok
Date: 2011 / 12 / 12 Time: 15 : 39 : 09
Sync with PC
Date: / / Time: : :
Set manually

5.10 Multi-Camera

This page allows you to add, modify, or delete additional IP cameras on your camera list. To access this page, navigate to [Setup] > [Multi-Camera]. The following screen will appear.



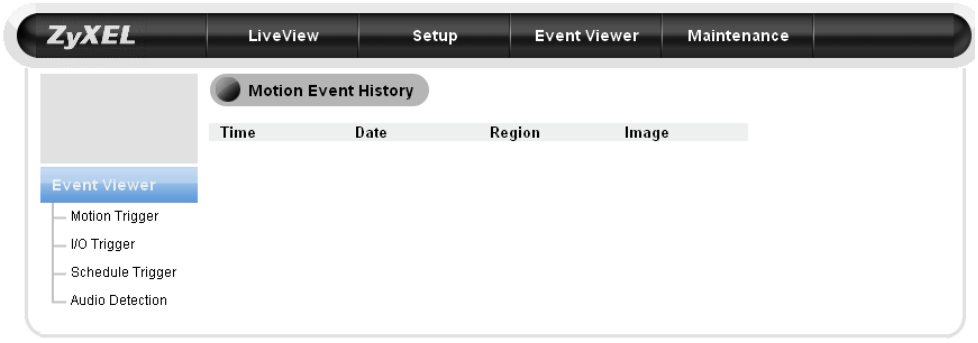
To add a camera, click [Add]. The following screen will appear.

The following table describes the labels found within this screen.

Camera	The # by which this camera will be identified
IP Address	Enter the camera's IP address here
User Name	Enter the username used to access the new camera in this field
Password	Enter the password used to access the new camera in this field
RTSP Port	Enter the camera's RTSP port (default 554)
HTTP Port	Enter the camera's HTTP port (default 80)
Save	Save
Cancel	Cancel

6 Event Viewer

The Event Viewer allows you to view detailed logs of events which have been triggered. To access this page, navigate to [Setup], then select [Event Viewer] from the top panel. Select any type of event from the sidebar (Motion, I/O, Scheduled Triggers, or Audio Detection) to view that type's history, or click on image links to view event-triggered snapshots.



7 Maintenance

The Maintenance screen provides information about your IP camera, access to the history log, and system maintenance functions.

7.1 Information

To access the Maintenance Information screen, navigate to [Setup], then select [Maintenance] from the top panel. The following screen will appear.

Item			Information Valid
Firmware Ver.			IPC-4605N 0.1_71111251596
Stream 1	Video	Resolution	320x240
		Codec	H264
		Quality	512Kbps
Stream 2	Video	Resolution	320x240
		Codec	MJPEG
		Quality	512Kbps
Camera	White Balance		Auto
	Exposure Control		Auto
	Low Light Mode		OFF
Ethernet	IP		192.168.1.11
	DNS		192.168.1.1

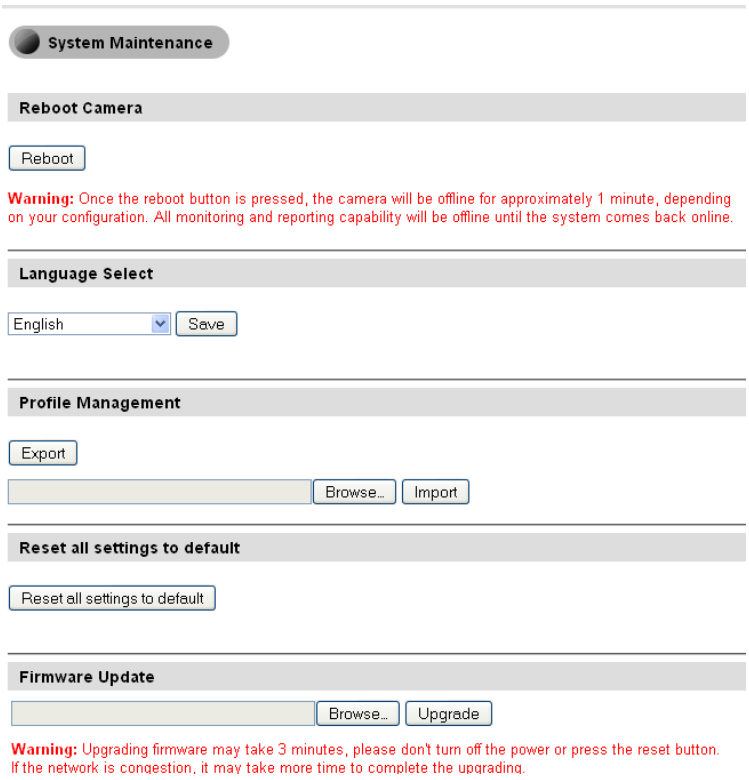
7.2 Log

This page provides a system log for your camera. To access this page, navigate to [Setup], select [Maintenance] from the top panel, and then select [Log] from the side panel.

To clear the system log, click the [Clear Log] button.

7.3 System Maintenance

The System Maintenance page allows you to reboot your IP camera, change the User Interface language, export/import profiles, reset to factory defaults, or update your camera’s firmware.


System Maintenance
Reboot Camera
Reboot
Warning: Once the reboot button is pressed, the camera will be offline for approximately 1 minute, depending on your configuration. All monitoring and reporting capability will be offline until the system comes back online.
Language Select
English
Save
Profile Management
Export
Browse...
Import
Reset all settings to default
Reset all settings to default
Firmware Update
Browse...
Upgrade
Warning: Upgrading firmware may take 3 minutes, please don't turn off the power or press the reset button.
If the network is congestion, it may take more time to complete the upgrading.

7.3.1 Reboot Camera

Press the [Reboot] button to reboot your camera.

7.3.2 Profile Management

Profile Management allows users to easily set up multiple cameras. After one camera is properly configured, users can export that camera's configuration to a profile on their PC, which can then be loaded onto other cameras. This feature also serves as a backup in case settings need to be restored.

1) After the first camera has been properly configured, go to [Maintenance] > [Profile Management], and click [Export] to download a profile to a user-specified location.
2) To load an existing profile into a camera, log into that camera's System Maintenance page, press [Browse], and locate the profile you wish to load. Click [Import] to load the profile.
3) The camera will reboot, which can take approximately 60 seconds. Do not interrupt the reboot process, as this can damage your camera permanently

Caution:
You may only import profiles among identical camera models.

7.3.3 Firmware Update

Firmware updates are available at us.zyxel.com/support. After downloading the latest firmware for your camera, click the [Browse] button to locate the firmware file on your hard drive, then click the [Upgrade] button to update the camera's firmware. Once the upgrade process begins, it must not be interrupted or you risk permanently damaging your camera.

If some icons are out of place after reboot, press [Ctrl] + [F5] to force your browser to refresh its cache.

Caution:
Before updating firmware, close all other browser windows and background applications.

Note: Should you accidentally close your browser's window during the upgrade process, DO NOT unplug the power cable or reset the camera immediately. Try waiting 3-5 minutes, as the camera may complete the upgrade process on its own.

8 Troubleshooting

During the course of installation, you might encounter various issues. The following section contains some troubleshooting procedures to help you solve these problems.

8.1 Reconfiguring Your Device

Anytime you need to re-configure your IP camera, you can simply double-click on the eaZy Wizard icon to launch the eaZy Wizard configuration tool. During the configuration, the eaZy Wizard will automatically scan for all of the available ZyXEL IP surveillance products installed on your LAN network (even if they are not on the same subnet). Scanning generally takes around 1 minute to complete, and once it completes, you will see all available IP cameras populate the list.

8.2 Cabling Check

If your camera doesn't appear on the device list in the eaZy Wizard, follow these steps to check your cables:

1) Check that your IP camera has been connected to the LAN network and powered on for more than 1 minute
2) Check to see if your computer has a successful connection to the network.

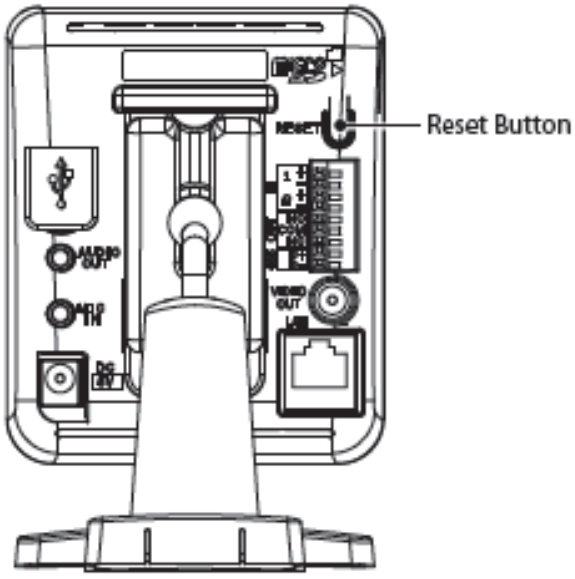
Note: You can check your router's connection status from the maintenance page of your router's settings.

8.3 Resetting to Factory Defaults

If you've forgotten your password, or your camera's been acting generally strange, you can follow the steps below to reset the camera to its default settings. To reset the camera:

1) Press and hold the reset button (located on the camera's rear panel) for approximately 10 seconds. When successful, you should see the status indicator light turn off.
2) After approximately 5 more seconds, the status indicator light should turn on again. This indicates that the camera has been successfully reset to factory defaults.
3) Reconfigure your camera using the eaZy Wizard.

Once the camera is reset, it will take approximately 1 minute to reboot. Wait for it to finish, then load the eaZy Wizard to scan for the camera.



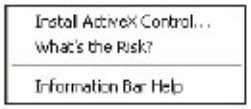
8.4 Trouble with Active X

After launching your browser and entering your camera's IP address, you'll be asked for the username and password combination (Default is admin/admin, case sensitive.)

No User Interface in the Browser

This issue could have three possible causes.

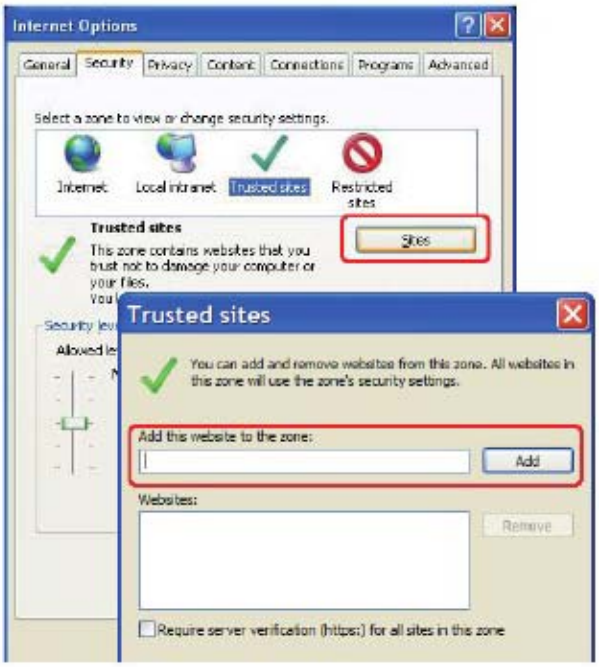
1) ActiveX was not installed. Follow the instructions on-screen to install ActiveX, or you won't have access to the user interface.



Internet Explorer - Security Warning
Do you want to install this software?
Name: IPCamClientActiveX.cab
Publisher: ZyXEL Communications Corporation
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

Note:
ZyXEL's ActiveX components only support 32-bit Internet Explorer. If your computer is running a 64-bit operating system, you'll still need to use a 32-bit browser to access the camera.

2) ActiveX was installed but not enabled. Ensure that ActiveX has been properly registered in Internet Explorer. Make sure that both USActiveX.cab and IPCamClientActiveX.cab are registered under the Tools > Manage Add-Ons menu in Internet Explorer.
3) Browser security settings. Ensure your browsers security settings allow the installation of ActiveX by adding the IP address of the camera to the list of trusted sites in Internet Explorer.

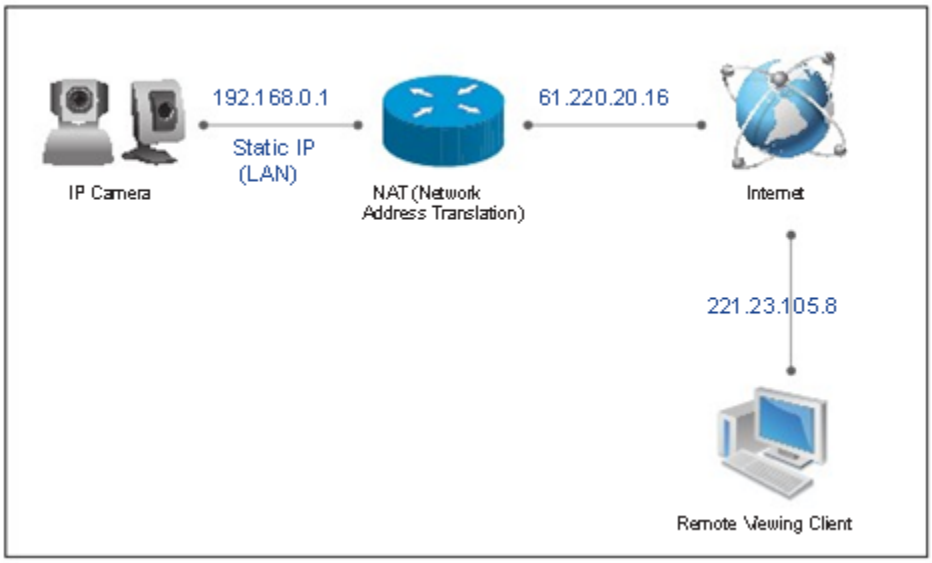


If you've gone through all above steps but still can't obtain video/audio on your browser, close all browser windows and delete the 'IPSurveillance Embedded" folder found in C:\Program Files. (If using 64-bit windows, look in C:\Program Files (x86)), then open your browser, log into your IP camera, and reinstall the ActiveX client.

If your browser is returning a "213 file not found" error, try rebooting your computer.

8.5 Trouble with Remote Viewing on Browser

You can view your camera's video streams remotely over the Internet. If you're having trouble viewing video remotely, refer to the section below for troubleshooting tips.

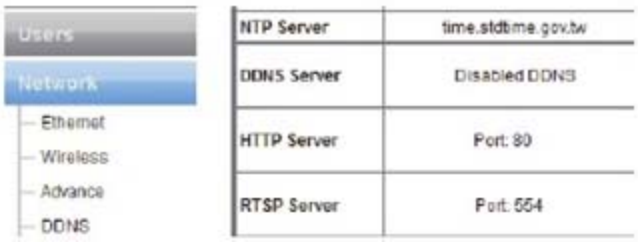


The above figure depicts a typical setup in which:

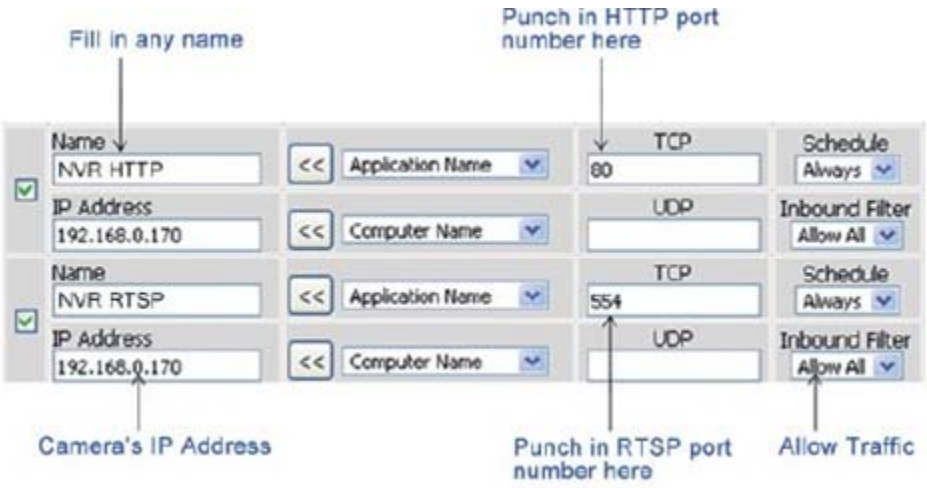
- The IP camera has a static virtual IP address of 192.168.0.1
- The WAN IP address at the IP camera site is 61.220.20.16
- The client (user) is trying to receive the video/audio stream remotely.

To successfully view live video streamed from the IP camera, you need to:

1) Ensure that the camera's image quality setting stays within the bandwidth limit of your local network. You can check the camera's image quality setting in [Setup] > [Video]. If your quality setting exceeds your bandwidth limit, you will experience stuttering video or a blank screen.
2) Check the ports used by the camera in [Setup] > [Network] and note the HTTP and RTSP server ports, in this case ports 80 and 554 respectively, as shown below.



3) Enable port forwarding on your router and allow traffic on the ports the IP camera is using. You may need to consult the manufacturer of your router for setting details. Note: Your router may require a reboot after port forwarding is set. The following figure details the settings required to remotely view the IP camera.



After taking the above steps, you should be able to log into your IP camera from a remote location by entering the DDNS address or the static IP address into the navigation field of your web browser. For example, in this case, you could enter http://61.220.20.16:80 into the location field of Internet Explorer to access your IP camera.

Important:

- If you have multiple IP cameras installed on a network, you'll need to change HTTP and RTSP ports manually so each camera uses a different port. For example, the second device in the above example would need to use ports 80 and 555, and the second device would be accessed at http://61.220.20.16:81
- When configuring port forwarding/mapping on your router, note that the public RTSP port must be equal to the internal RTSP port used by the IP camera. For example, if the IP camera uses RTSP port 554 internally, then its mapped public RTSP port should also be 554. The same does not apply to the HTTP port.

8.6 Symptoms, Causes, and Solutions

Listed below are some common problems, and their solutions.

Symptom	Possible Cause/Solution
Problems accessing from LAN network using web browser	The entered IP address is incorrect. Make sure the IP address you entered matches the IP address of your camera. If you are certain that your camera is configured with the same subnet mask as that of your PC, you can first disconnect other cameras, then run the eaZy Wizard to scan for the camera on your network. It will display the camera's IP address on your network. (Note: If you're running Windows7/Vista, you'll need to run the eaZy Wizard tool with system administrator rights. Simply right-click the eaZy Wizard icon and select "run as administrator") If you're not sure whether your camer is on the same subnet as your PC, reconnect your camera to your PC directly (configure the IP address of your PC as 192.168.0.X), and run eaZy Wizard again to reconfigure its subnet address to match that of your PC, then reconnect it to your router or switch and run eaZy Wizard again.
	The viewing PC is not connected to the LAN network. Check to see if your PC has a successful connection to the LAN network your camera is installed on. You can open a command prompt window (by pressing Winkey+R, typing "cmd," and hitting OK), then input 'ipconfig' and press [Enter]. When your PC is connected to the network, it will display information about your IP address, subnet mask, etc.
Problems accessing via wireless connection	The wireless adapter is not firmly plugged into the camera's USB socket. Check if the wireless adapter is firmly plugged into the USB socket on camera. When camera has established wireless connection successfully, the LED status indicator of the wireless dongle will appear green and blue.
	Wireless settings are not configured properly. Check to see if wireless settings are configured correctly. Go to the camera's Wireless Settings page and make sure you have inputted the right IP address, SSID and Keyphrase.
	The wireless connection is broken. If you intend to access your camera by way of wireless connection, please check that: 1. The IP camera is connected to the correct wireless access point. 2. You have correctly set the encryption type and key for the wireless connection. If you didn't use a router on your network, the default IP address for the camera will be 192.168.0.128. You can check the status of the connection by logging on to your router's maintenance page. Consult with the manufacturer of your router for detailed instructions.

Symptom	Possible Cause/Solution
Scanning and connecting to wireless AP takes a long time	Too many wireless APs nearby. The amount of time taken to scan wireless APs depends on the number of wireless APs around the camera. If there are too many wireless APs (30 or more), it may take as long as 3 minutes to complete the scanning process. A possible workaround is to turn down the video setting a notch temporarily, and then turn it up again after you have completed configuring your wireless connection. For example, you can first set your video setting as QVGA, MPEG-4, 5fps, 512Kbps; Then go to network page for wireless connection setup and set the video setting back to its original state. This could reduce scanning time
Successful login to the camera, but no image is displayed	The ActiveX component is not installed. If you are viewing the camera video on Internet Explorer, make sure you have installed and enabled the camera's ActiveX components. Open Internet Explorer and go to [Tools] > [Manage Add-ons] and check that you've got both the "IPCamClientActiveX.cab" and "USActiveX.cab" control components registered and enabled. Refer to the "Trouble with the ActiveX Client" section of this manual for further help.
	The VLC plugin is not installed for non-IE browsers. If you're viewing the camera from Firefox, Safari, or Chrome, make sure your VLC plugin is properly installed. (Visit www.videolan.org/vlc/ to download the codec.)
Successful access on local network, but trouble accessing from the Internet.	The entered hostname/WAN IP address is incorrect. Make sure you entered the correct hostname (if you use DDNS) or the WAN IP address of your camera in the location field of the web browser.
	The LAN network is not connected to Internet. Both the device you're using and the camera need to have a connection to the Internet. Check if you can browse the Internet on your LAN network. If not, contact your network administrator for assistance.
	The camera's WAN IP address has changed but yet to be updated into DNS cache. If you use DDNS service, the information of your camera's IP address and the domain name the IP address is linked to are stored in the DNS cache. The cache is used to retrieve the IP information by the DNS server which translates entered hostname into the camera's IP address. Though the information is updated every few minutes (determined by the value of TTL, Time to Live), occasionally the DNS information changes (e.g. your camera acquires a new IP address) but the old information is still stored in the cache, resulting in connection failure. When this happens, try waiting a few minutes for the new IP information to be updated to the DNS server and then retry connection, or try to decrease the TTL value. If it still doesn't work, refer to other possible causes and solutions.
	The router's configuration does not allow incoming traffic to the camera. To access your camera from the internet, you'll need to enable port forwarding on your router and allow incoming traffic on the HTTP and RTSP port your camera is using (your router may require a reboot after port forwarding is set). Refer to the "Remote Viewing via Internet Explorer" section in the user manual for detailed information. If you don't know how to enable port forwarding on the router, consult the manufacturer of your router for instruction.

Symptom	Possible Cause/Solution
Network diagnosis shows error icon	Network connection error. The network connection test verifies that the camera has successfully connected to the LAN network. When the diagnosis result shows a red exclamation mark icon, it means that the camera fails to connect to the LAN network. Check if the LAN cable is securely connected to the Ethernet port of the camera and to your hub/router, or check if the LAN cable is functioning normally. Also check whether the gateway address your camera uses is identical to that of your router
	Internet connection error. The Internet connection test verifies if the camera is connected to the Internet. When the diagnosis result shows a red exclamation mark, it may represent a failed connection to the LAN network. It could also be caused by inappropriate settings on your router that makes your router unable to connect to the Internet, such as the wrong PPPoE user name/password, or wrong WAN IP settings (when your ISP provides you with fixed IP address). See if the PC connected to your router can also access the Internet. If not, consult your ISP/ router manufacturer for correct Internet setting. If your router can connect to the Internet but your camera connected to your router cannot, check whether the IP, subnet mask and gateway is correctly set on your camera.
	HTTP/RTSP port error. The HTTP port is used for transmitting web pages and commands over the Internet. The RTSP port is used for sending video/audio data. These two test items will fail whenever port forwarding is not enabled. Make sure you have enabled port forwarding on your router and have allowed traffic on ports your IP camera is using. Refer to the "Remote Viewing via Internet Explorer" section of this manual for more information
Problem using DDNS service	The user information is incorrect. Go to the main setup page. On the left menu, select [Network] > [DDNS], and check if the ID and password is correct. Also check with your service provider to see if your service account is active.
	The entered address is incorrect. Go to the main setup page and select [Network] > [DDNS] on the left menu, and then check if the DDNS service is enabled and if you have the correct address.
	Incoming traffic to the network camera is not allowed. Please refer to the "Remote Viewing via Internet Explorer" section in the troubleshooting chapter of this manual and look for instruction on enabling port forwarding.
Problem using eaZy Wizard	The IP camera’s IP address is repeatedly displayed as “DHCP mode” in eaZy Wizard. This means the camera cannot obtain an IP address from DHCP Server or the IP address assigned to the camera is not on the same subnet as the LAN network. Please try to set the camera’s IP address to a static one. Note that you have to set up the DNS server for your camera (in the advanced network settings) if your camera uses a static IP address.

Symptom	Possible Cause/Solution
Part of the image becomes pixilated/Image artifacts appear	Network bandwidth is insufficient. Without sufficient bandwidth, video quality will deteriorate and image errors like pixilation or frame-drop may occur. When you view your camera remotely from the Internet, your camera needs sufficient upload bandwidth to transmit video stream and you need sufficient download bandwidth to download video stream at the remote location. To gain satisfactory video quality, ensure there is sufficient upload bandwidth available to your network camera by taking the following actions: 1. Contact your Internet Service Provider (ISP) to confirm the upload/download speed limit of your service. If the bit rate of the video stream is set at 512Kbps or higher but your Internet service only provides a max. of 512Kbps for upload bandwidth, then try to lower the bit rate setting in [Setup] > [Video]. 2. Run a network speed diagnostics on WebVUer to determine the bandwidth level of the currently connected network. To do so, log in to your camera using WebVUer and go to [Setup] > [Network] > [Network Bandwidth]. When the speed diagnostics is done, the WebVUer will advise you of the appropriate setting. Consider the following actions to ensure sufficient download bandwidth at your remote viewing location: 1. Contact your Internet Service Provider (ISP) to confirm the upload/download speed limit of your service. If the bit rate of the video stream is set at 3Mbps or higher but your Internet service only provides a max. of 2Mbps download bandwidth, then try to lower the bit rate setting in [Setup] > [Video]. 2. Upgrade to a Gigabit network switch. Regular 10/100 Mbps network switches cannot handle multiple megapixel streams. 3. While you are viewing the network camera remotely, shutting down any other applications that are also consuming network bandwidth in the background.
Gray images are seen repeatedly	Network quality is insufficient. Seeing lots of gray images in live view mode indicates that many data packets which carry video data are dropped during the transmission. This might be caused by network congestion, wireless congestion, or the limited upload/download bandwidth of your network. To measure the upload/download capability of your network, you can use either the “Network Bandwidth” testing tool in the network settings page, or visit speedtest.net (http://speedtest.net/). When using wired connection: Test your bandwidth to determine whether this problem is the result of poor network quality. Alternatively, try connecting your camera to your viewing computer directly to see if there are any faulty devices on your network. When using wireless connection: Besides the possible network bandwidth issue, your wireless signal strength could also come into play. Low wireless signal strength can lead to the same problem. You can check your wireless signal strength in the camera’s network settings page. The wireless signal level seen in the network settings is measured in dBm. To gain the optimal wireless connection quality, a signal level greater than -60 dBm is recommended. When the signal level is too low, you may have to place your wireless Access Point in a different location, use a wireless repeater, or remove obstacles between the camera and the wireless AP.
Ghost image is seen	Network quality is too low. This is a common problem when the network’s quality is low or the video setting is too high. Lower your camera’s video bit rate and see if the problem continues.

Symptom	Possible cause/solution
A warning message appears stating "Your video quality is too high for your Internet bandwidth."	Network quality is not high enough. This means the camera's browser interface, WebVUer, could not receive a steady stream of video data from your camera. The loss of video data might also be caused by network congestion or insufficient bandwidth. Please refer to other related troubleshooting tips. Additionally, if the CPU usage on your viewing computer is too high, the same warning message will be showed. You can monitor the CPU usage by right clicking on your Windows taskbar and choose "task manager", and then click the Performance tab.
Cannot store recordings on a microSD card	The microSD card is not inserted firmly into position. Remove the memory card and re-insert it into the card slot. To verify if your SD card is properly installed, go to [Setup] > [Recording Setup] > [Micro SD], and check if [SD Card Status] and [SD Card Capacity] shows correct information. If "not detected" is shown, remove and re-insert the card again, refresh the WebVUer, and verify again.
	The microSD card is not properly formatted. Go to main setup page, and choose [Recording Setup] from the left menu. Choose [Micro SD] for the "Destination" field, and then press the [Format] button. If still not functioning properly, try storing still snapshots onto the SD card. Failure in storing snapshots often suggests a problem with the memory card.
	Your microSD card is not supported by the camera. Your IP camera may not fully support high capacity memory cards from all manufacturers. Contact ZyXEL if you think you've encountered an SD card compatibility problem.
	Your SD card does not meet writing speed requirements. You may experience minor issues in video recording when your SD card doesn't meet writing speed requirements. ZyXEL recommends using class 4 or above SD cards for video recording.
	A motion detection region has not been configured for recording triggered motion events. If you want to record video clips of detected motion to an SD card, you'll need to set at least one motion detection region before setting up event-based recording in Recording Setup.

Technical Support Information

In the event of problems that cannot be solved, please contact your vendor. If you cannot contact your vendor, contact a ZyXEL office in the region in which you bought the device. Regional offices are listed at www.zyxel.com/web/contact_us.php

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9 Technical Specifications

Category		IPC-3605N
Camera	Image Sensor	
	Lens	• Focal Length: 4.0mm • Max Aperture Ratio: F1.5 • Fixed Iris
	Focus Range	0.5m ~ INF
	Minimum Illumination	IR Mode: 0 lux with built in IR LEDs on (12 LEDs in total; effective distance up to 10m) Color mode: 1.0 lux
	Shutter Time	1/5 ~ 1/16000 Sec
Video	Video Compression	• H.264 (Mpeg-4 Part 10) • Motion JPEG • MPEG-4 Part 2
	Resolution	160x120, 320x240, 640x480, 1280x720 (720P)
	Frame Rate	Up to 15 FPS at 1280x720 (720P)
	Video Streaming	Dual H.264, MJPEG, or MPEG-4 video streams
	Image Settings	• Adjustable image size and quality • ACG, AWB, AES • Configurable brightness, saturation, and sharpness
Audio	Audio Communication	Two-way audio with built-in MIC (S/N ration 58dB, 50-10000hz)
	Audio Compression	G.711 PCM 64Kbit/sec
	Audio input/output	MIC input / Audio out
Network	Security	User ID/Password protection
	Supported Protocols	DDNS/PPPoE/HTTP Server/DHCP Client/NTP Client/DNS Client/FTP Client/SMTP Client/ARP/ICMP/IPV4/UDP/TCP/IP
Firmware	Firmware	• Supports UPnP • Supports online firmware update

Category		IPC-3605N
Software	NVR Station	• Multiple channel management (32-channels) • Fast and intuitive camera setup • Search and playback recordings by event types • Scheduled and event-based management • Smart motion and audio detection
Web Browser	Internet Explorer (ActiveX)	• Remotely view and configure camera on Internet Explorer • Record video and capture snapshots on PC; download recordings from microSD card • Alarm and event management: FTP, I/O alarm, server notification, SMS/Email alert
	Supported Devices	• PC, Laptop, Tablet, Nettop, MID with IE/ActiveX support • Viewing in MJEPEG mode on mobile phone, iPhone/iPad, BlackBerry, Android, Windows Mobile, PDA
Mobile Phone	MJPEG Mode	Viewing of camera image via phone browsers
	3GPP Mode	Viewing of camera image via 3G phones (3GPP streaming)
General	Operating Conditions	5°C ~40°C
	Power Supply	DC12V/2A
	System Requirements	• Computer with 1.7GHz processor and 512MB memory or above • Supported Operating Systems: Windows XP SP3, Vista SP1, Windows7 x86/x64
	Included Accessories	• Software CD (electronic manual included) • Quick Installation Guide • Power Adapter • Network Cable • Screws for ceiling mounting • Screw mount
	Dimensions	105mm x 125.5mm x 128.6mm

*Specifications are subject to change without prior notice.

10 Open-Sourced Components

3rd Party Software	Version	License
Addgroup	V1.13.4	Busybox, GPLv2
Adduser	V1.13.4	Busybox, GPLv2
Ash	V1.13.4	Busybox, GPLv2
AVN-IPv4LL	V1.13.4	GPL
Busybox	V1.13.4	Busybox, GPLv2
Cat	V1.13.4	Busybox, GPLv2
Chattr	V1.13.4	Busybox, GPLv2
Chgrp	V1.13.4	Busybox, GPLv2
Chmod	V1.13.4	Busybox, GPLv2
Chown	V1.13.4	Busybox, GPLv2
ComproRTSP	V1.13.4	GPL, modified from live.2008.12.20
Cp	V1.13.4	Busybox, GPLv2
Cttyhack	V1.13.4	Busybox, GPLv2
Date	V1.13.4	Busybox, GPLv2
Dd	V1.13.4	Busybox, GPLv2
Delgroup	V1.13.4	Busybox, GPLv2
Deluser	V1.13.4	Busybox, GPLv2
Df	V1.13.4	Busybox, GPLv2
Dmesg	V1.13.4	Busybox, GPLv2
Echo	V1.13.4	Busybox, GPLv2
Egrep	V1.13.4	Busybox, GPLv2
Email	V3.1.2	GPL
Ethtool	V6	GPL
False	V1.13.4	Busybox, GPLv2
Fgrep	V1.13.4	Busybox, GPLv2
ftp	V0.16	GPL
Grep	V1.13.4	Busybox, GPLv2
Gnuzip	V1.13.4	Busybox, GPLv2
Gzip	V1.13.4	Busybox, GPLv2
Hostname	V1.13.4	Busybox, GPLv2
Htpasswd	V1.19	GPL
Ip	V1.13.4	Busybox, GPLv2
Ipaddr	V1.13.4	Busybox, GPLv2
Iplink	V1.13.4	Busybox, GPLv2
Iproute	V1.13.4	Busybox, GPLv2
Iptables	V1.4.10	GPL
Iptables-multi	V1.4.10	GPL
Iptables-restore	V1.4.10	GPL
Iptables-save	V1.4.10	GPL
iwconfig	V29	GPL

Iwlist	V29	GPL
Iwpriv	V29	GPL
Kill	V1.13.4	Busybox, GPLv2
Ln	V1.13.4	Busybox, GPLv2
Login	V1.13.4	Busybox, GPLv2
Ls	V1.13.4	Busybox, GPLv2
Lsattr	V1.13.4	Busybox, GPLv2
Mini_httpd	V1.19	GPL
Mkdir	V1.13.4	Busybox, GPLv2
Mkdosfs	V2.11	GPL
Mknod	V1.13.4	Busybox, GPLv2
Mktemp	V1.13.4	Busybox, GPLv2
More	V1.13.4	Busybox, GPLv2
Mount	V1.13.4	Busybox, GPLv2
Mountpoint	V1.13.4	Busybox, GPLv2
Mv	V1.13.4	Busybox, GPLv2
Netstat	V1.13.4	Busybox, GPLv2
Nice	V1.13.4	Busybox, GPLv2
Ping	V1.13.4	Busybox, GPLv2 Busybox, GPLv2
Ping6	V1.13.4	Busybox, GPLv2
Ps	V1.13.4	Busybox, GPLv2
Pwd	V1.13.4	Busybox, GPLv2
Rm	V1.13.4	Busybox, GPLv2
Sed	V1.13.4	Busybox, GPLv2
Sh	V1.13.4	Busybox, GPLv2
Sleep	V1.13.4	Busybox, GPLv2
Stat	V1.13.4	Busybox, GPLv2
Stty	V1.13.4	Busybox, GPLv2
Stunnel	V4.36	GPL
Su	V1.13.4	Busybox, GPLv2
Sync	V1.13.4	Busybox, GPLv2
Tar	V1.13.4	Busybox, GPLv2
Touch	V1.13.4	Busybox, GPLv2
True	V1.13.4	Busybox, GPLv2
Umount	V1.13.4	Busybox, GPLv2
Uname	V1.13.4	Busybox, GPLv2
Upnpc-static	V20071003	GPL
Vi	V1.13.4	Busybox, GPLv2
Watch	V1.13.4	Busybox, GPLv2
Zcat	V1.13.4	Busybox, GPLv2
Ld-2.11.so		GPLv3
Ld-linux.so.3		GPLv3
Libc.so	V2.11	GPLv3
Libc.so.6	V2.11	GPLv3

Libc-2.11.so	V2.11	GPLv3
Libcrypt.so	V2.11	GPLv3
Libcrypt.so.1	V2.11	GPLv3
Libcrypt-2.11.so	V2.11	GPLv3
Libcrypto.so	V0.98m	GPL
Libcrypto.so.0.9.8	V0.98m	GPL
Libdl.so	V2.11	GPLv3
Libdl.so.2	V2.11	GPLv3
Libdl-2.11.so	V2.11	GPLv3
Libgcc_s.so	V4.4.0	GPLv3
Libgcc_s.so.1	V4.4.0	GPLv3
Libip4tc.a	V1.4.10	GPL
Libip4tc.la	V1.4.10	GPL
Libip6tc.a	V1.4.10	GPL
Libip6tc.la	V1.4.10	GPL
Libiptc.a	V1.4.10	GPL
Libiptc.la	V1.4.10	GPL
Libiw.so.29	V29	
Libixml.so	V1.4.10	GPL
Libixml.so.2	V1.4.10	GPL
Libixml.so.2.0.2	V1.4.10	GPL
Libm.so	V2.11	GPLv3
Libm.so.6	V2.11	GPLv3
Libm-2.11.so	V2.11	GPLv3
Libnsl.so	V2.11	GPLv3
Libnsl.so.1	V2.11	GPLv3
Libnsl-2.11.so	V2.11	GPLv3
Libnss_dns.so	V2.11	GPLv3
Libnss_dns.so.2	V2.11	GPLv3
Libnss_dns-2.11.so	V2.11	GPLv3
Libnss_files.so	V2.11	GPLv3
Libnss_files.so.2	V2.11	GPLv3
libnss_files-2.11.so	V2.11	GPLv3
Libpthread.so	V2.11	GPLv3
Libpthread.so.0	V2.11	GPLv3
Libpthread-2.11.so	V2.11	GPLv3
Libresolv.so	V2.11	GPLv3
Libresolv.so.2	V2.11	GPLv3
Libresolv-2.11.so	V2.11	GPLv3
Librt.so	V2.11	GPLv3
Librt.so.1	V2.11	GPLv3
Librt-2.11.so	V2.11	GPLv3
Libsc.so	V2.11	GPLv3
Libsc.so.1.0.2	V2.11	GPLv3
Libsockipc.so	V2.11	GPLv3

Libsockipc.so.1.2	V2.11	GPLv3
Libssl.so	V0.98m	GPL
Libssl.so.0.9.8	V0.98m	GPL
Libstdc++.so	V4.4.0	GPLv3
Libstdc++.so.6.0.11	V4.4.0	GPLv3
Libthread_db.so	V4.4.0	GPLv3
Libthread_db.so.1	V2.11	GPLv3
Libthread_db-1.0.so	V2.11	GPLv3
Libthreadutil.so	V1.4.1	GPL
Libthreadutil.so.2	V1.4.1	GPL
Libthreadutil.so.2.0.2	V1.4.1	GPL
Libupnp.so	V1.4.1	GPL
Libupnp.so.2	V1.4.1	GPL
Libupnp.so.2.0.2	V1.4.1	GPL
Libutil.so	V2.11	GPLv3
Libutil.so.1	V2.11	GPLv3
Libutil-2.11.so	V2.11	GPLv3
Libxtables.a		GPLv3
Libxtables.la		GPLv3
Adjtimex	V1.13.4	Busybox, GPLv2
Arp	V1.13.4	Busybox, GPLv2
Blkid	V1.13.4	Busybox, GPLv2
Depmod	V1.13.4	Busybox, GPLv2
devmem	V1.13.4	Busybox, GPLv2
Fdisk	V1.13.4	Busybox, GPLv2
Freeramdisk	V1.13.4	Busybox, GPLv2
Fsck	V1.13.4	Busybox, GPLv2
Fsck.minix	V1.13.4	Busybox, GPLv2
Getty	V1.13.4	Busybox, GPLv2
Halt	V1.13.4	Busybox, GPLv2
Hwclock	V1.13.4	Busybox, GPLv2
Ifconfig	V1.13.4	Busybox, GPLv2
Ifdown	V1.13.4	Busybox, GPLv2
Ifup	V1.13.4	Busybox, GPLv2
Init	V1.13.4	Busybox, GPLv2
Insmod	V1.13.4	Busybox, GPLv2
Klogd	V1.13.4	Busybox, GPLv2
Logread	V1.13.4	Busybox, GPLv2
Losetup	V1.13.4	Busybox, GPLv2
Lsmod	V1.13.4	Busybox, GPLv2
makedevs	V1.13.4	Busybox, GPLv2
Mdev	V1.13.4	Busybox, GPLv2
Mkds.minix	V1.13.4	Busybox, GPLv2
Mkswap	V1.13.4	Busybox, GPLv2
Modprove	V1.13.4	Busybox, GPLv2

Pivot_root	V1.13.4	Busybox, GPLv2
Poweroff	V1.13.4	Busybox, GPLv2
Reboot	V1.13.4	Busybox, GPLv2
Rmmod	V1.13.4	Busybox, GPLv2
Route	V1.13.4	Busybox, GPLv2
Runlevel	V1.13.4	Busybox, GPLv2
Start-stop-daemon	V1.13.4	Busybox, GPLv2
Sulogin	V1.13.4	Busybox, GPLv2
Swapoff	V1.13.4	Busybox, GPLv2
Swapon	V1.13.4	Busybox, GPLv2
Switch_root	V1.13.4	Busybox, GPLv2
Sysctl	V1.13.4	Busybox, GPLv2
Syslogd	V1.13.4	Busybox, GPLv2
Udhcpc	V1.13.4	Busybox, GPLv2
Watchdog	V1.13.4	Busybox, GPLv2
haserl	V0.9.26	GPL

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Version 3, 29 June 2007

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